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AND

THE SOUTH CAROLINA WATER RESOURCES COMMISSION

Yadkin - Pee Dee

River Basin

North Carolina
and South Carolina

ECONOMIC BASE STUDY

AND

PROJECTIONS

SPECIAL REPORT

1978

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ECONOMIC BASE STUDY AND PROJECTIONS
FOR THE YADKIN - PEE DEE USDA COOPERATIVE RIVER BASIN STUDY

October 1978

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METHODOLOGY

The material presented in this study comes from both primary and secondary sources. Information concerning general population and economic aspects of the basin as well as population and economic projections are based on secondary information. Forestry information was disaggregated for the Study Area by the Southeastern Forest Experiment Station from surveys carried out in 1968 for South Carolina and in 1974 for North Carolina. A new survey in South Carolina is now underway, and state-wide resource data should be substituted in this report in order to provide proper comparisons between subareas. The reference section lists the specific state and federal sources of secondary information. Projections of future land use associated with various levels of production from the basin's food and fiber sector were produced by computer programming models of the agricultural sectors of North and South Carolina.

Essentially all secondary data needed for this study are available only at the county and state level. Thus the geographic area used for the economic study follows county boundaries rather than hydrologic boundaries. Figure 1 shows the boundaries of the Economic Study Area in relation to the hydrologic boundaries of the Yadkin - Pee Dee River Basin.

The South Carolina portion of the Economic Study Area, referred to as the Pee Dee Study Area, is subdivided into three subareas which correspond to South Carolina Councils of Government 6, 7 and 8. The North Carolina portion of the Economic Study, referred to as the Yadkin Study Area, is divided into the Yadkin Mainstem and Lumber subareas. These subdivisions are also shown in Figure 1.

The subarea boundaries were designated by the South Carolina Water Resources Commission and the North Carolina Department of Natural Resources and Community Development. These agencies felt that data summarized

according to their recommended subareas would be more useful for state and local agencies.

Data for individual counties are presented on maps of the entire Yadkin - Pee Dee Economic Study Area to provide a quick comparison among all counties. Tabular data for counties are presented in the appendix.

In contrast to the boundaries used for the economic base information, all projections of the agricultural sector will be made on the basis of hydrologic boundaries. All tables will be clearly marked to avoid confusion whether the area referred to is the Economic Study Area or the River Basin.

Figure 1



Yadkin-Pee Dee River Basin
NORTH CAROLINA, SOUTH CAROLINA AND VIRGINIA

0 10 20 30
MILES

EDITED FROM UNITED STATES BUREAU OF
LANDS' COMMERCIAL CONSTRUCTION
GRIDS BASED ON NORTH CAROLINA
COORDINATE SYSTEM SOUTH CAROLINA
COORDINATE SYSTEM NORTH CAROLINA

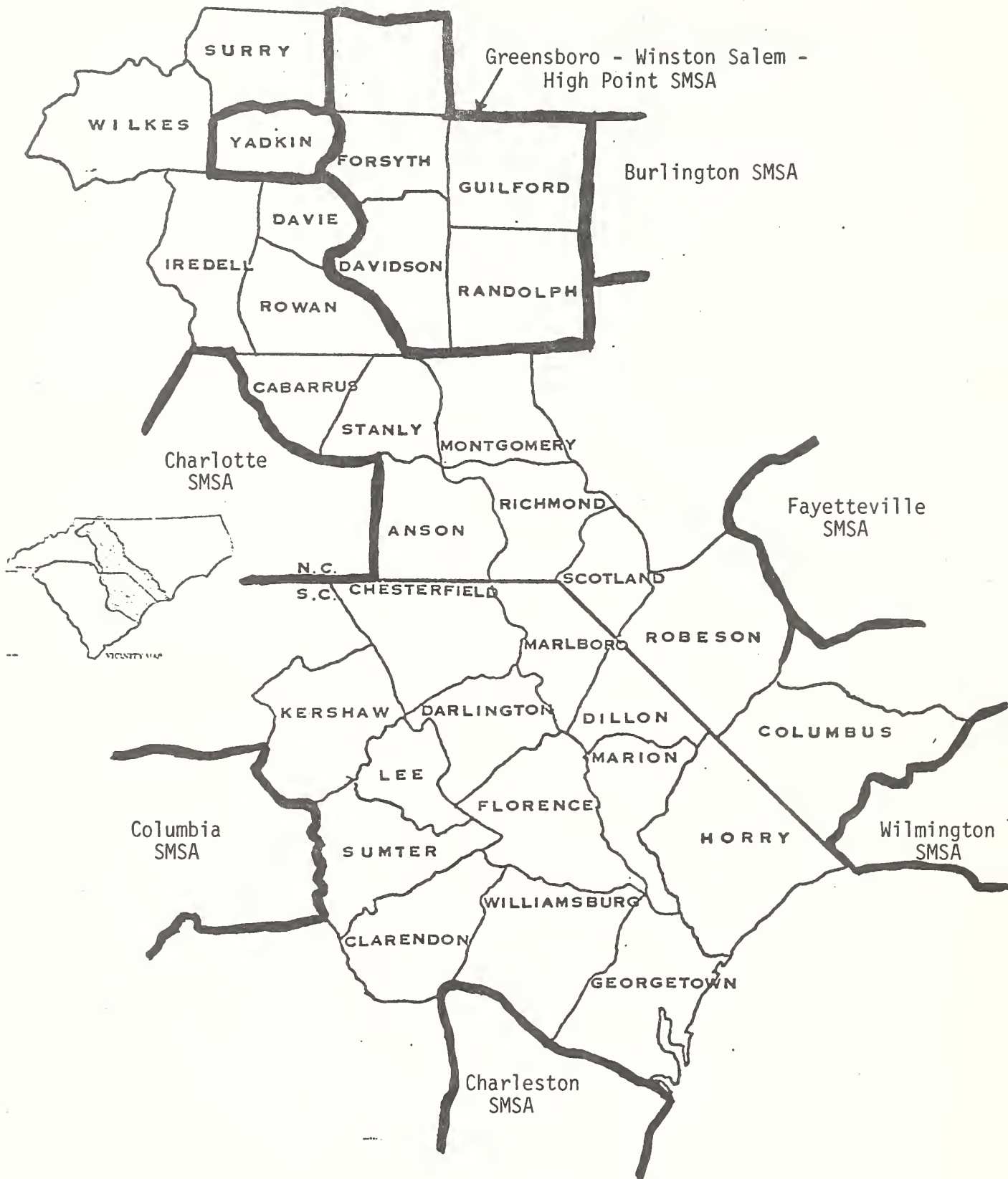
POPULATION CHARACTERISTICS

General Population Characteristics

The general population characteristics show a number of differences in each subarea of the Yadkin - Pee Dee Economic Study Area. A prominent influence on population dynamics in the area is the location of Standard Metropolitan Statistical Areas (SMSA's). Six SMSA's are located on the boundaries of the Study Area while the Greensboro-Winston Salem-High Point SMSA is located entirely in the Study Area with the exception of Stokes County (Figure 2). In general counties with the highest population density (Figure 3) and greatest proportion of urban residents (Figure 4) are located in or near SMSA's. Exceptions appear to be the two coastal SMSA's of Charleston in South Carolina and Wilmington in North Carolina and to a lesser extent the Fayetteville SMSA. The Charlotte and Greensboro-Winston Salem-High Point SMSA's appear to have particularly strong influence on population characteristics in the Study Area. As Table 1 shows the Yadkin Main Stem subarea has a much larger population and is much more urbanized than the Lumber subarea and the entire Pee Dee Study Area.

A number of interesting changes in population trends can be seen by examining changes in total population and net migration figures. Total population changes are absolute changes, while net migration figures are determined by comparing the absolute change in two time periods with the number of births and deaths during the period and finding whether there has been a net increase or decrease in the area. Net migration figures are greatly affected by the age structure of the population since a young population would generally have more births and fewer deaths than an area with an older population. The changes in total population and net migration shown in Table 2 for subareas of the Economic Study Area show considerable changes have taken place in each category between 1960-1970 and the more recent period 1970-1976. From 1960-1970 the change in total

Figure 2



Yadkin-Pee Dee River Basin
NORTH CAROLINA, SOUTH CAROLINA AND VIRGINIA

0 10 20 30
MILES

CONTINUED FROM MAP, 1968 AND STATE BASE MAPS
BASED ON 1:50,000 SCALE, 1968 EDITION
SOUTH CAROLINA, 1968 EDITION
COORDINATE SYSTEM, 1968 EDITION
COORDINATE SYSTEM, 1968 EDITION

Location of SMSA's In or Near Yadkin -
Pee Dee Study Area

Figure 3

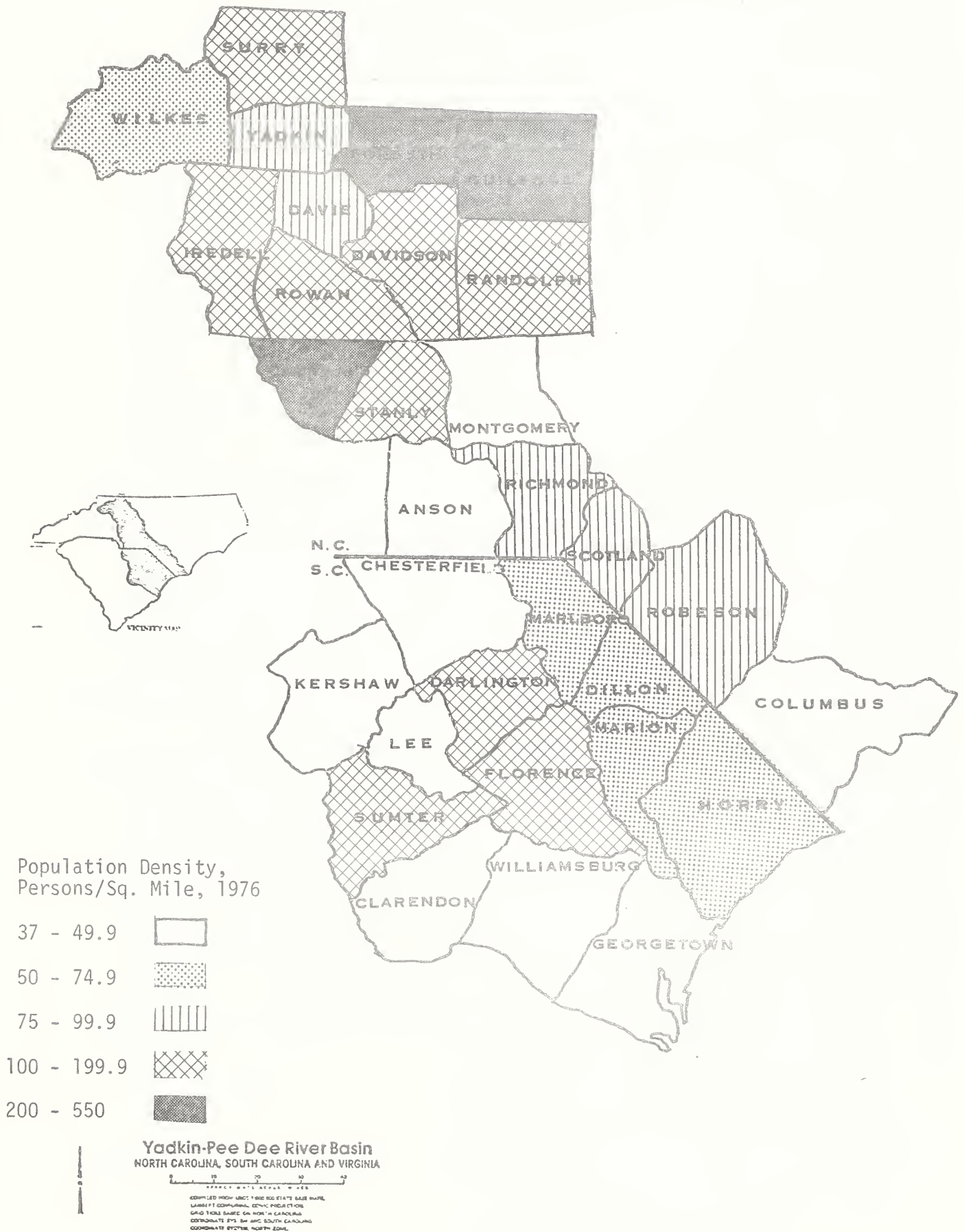
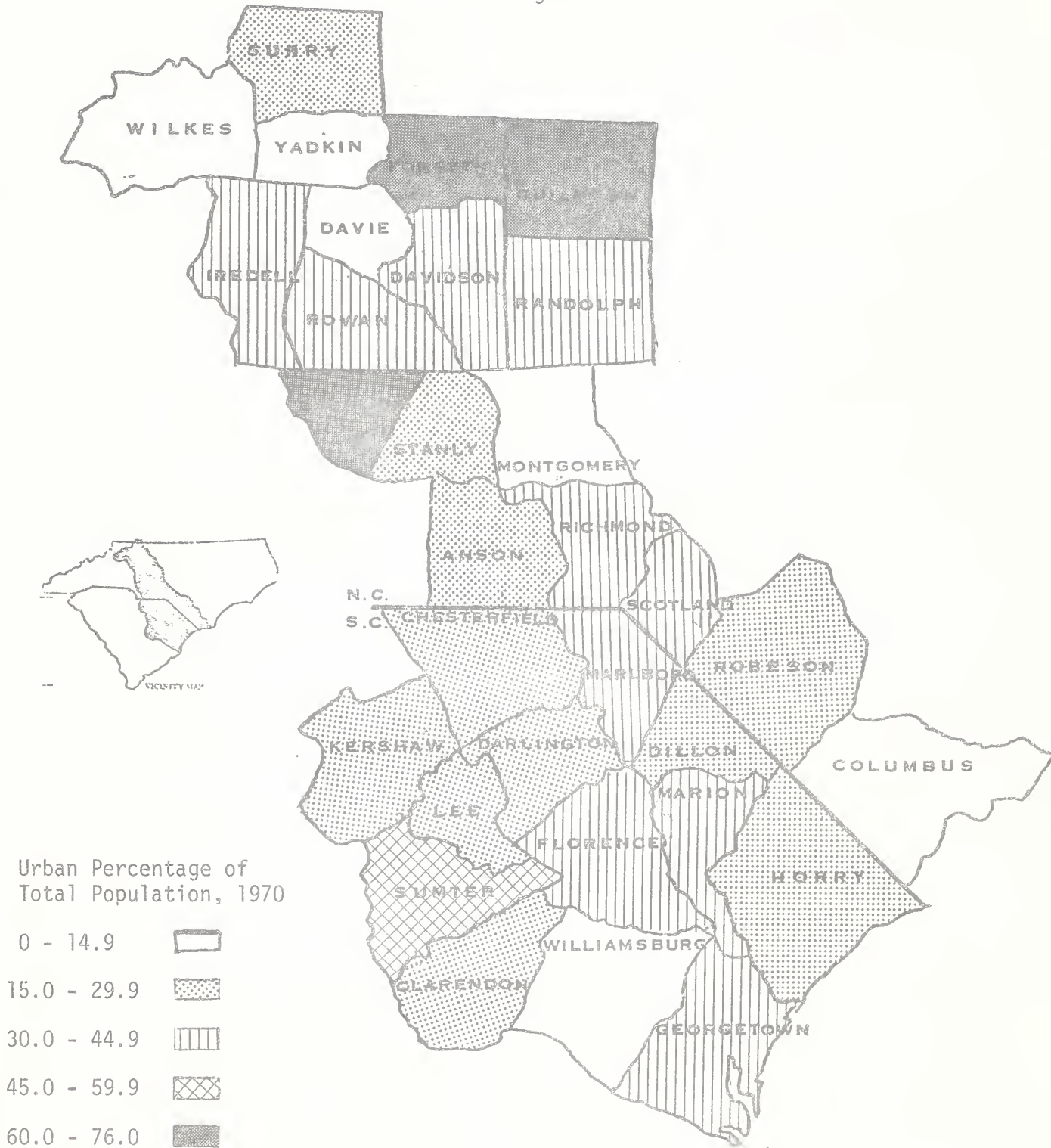


Figure 4



Source: 15, 19.

Yadkin-Pee Dee River Basin
NORTH CAROLINA, SOUTH CAROLINA AND VIRGINIA

0 10 20 30 40
MILES
COMPILED FROM 1960 AND 1970 STATE BOUNDARY MAPS
LARGELY BY CONFORMING TO THE PRESENTATION
OF THE BUREAU OF ECONOMIC GEOGRAPHY
COORDINATE BY THE U.S. GEOLOGICAL SURVEY
COORDINATE BY THE U.S. GEOLOGICAL SURVEY

Table 1. Population, Urban and Rural Components, and Density, Yadkin - Pee Dee Economic Study Area, 1960 and 1970.

Region and Component		1960	1970
6	Total	159,848	158,079
	Percent	72	66
	Percent Urban	28	34
	Density (persons/sq. mile)	64.9	64.2
7	Total	262,210	263,004
	Percent Rural	71	69
	Percent Urban	29	31
	Density	74.6	74.8
8	Total	143,977	137,735
	Percent Rural	75	73
	Percent Urban	25	27
	Density	49.6	47.5
Pee-Dee Study Area			
	Total	566,035	558,818
	Percent Rural	73	69
	Percent Urban	27	31
	Density	63.8	62.9
Yadkin Main Stem Subarea			
	Total	1,046,869	1,181,642
	Percent Rural	50	50
	Percent Urban	50	50
	Density	136.6	154.2
Lumber Subarea			
	Total	163,258	158,708
	Percent Rural	81	77
	Percent Urban	19	23
	Density	73.8	71.8
Yadkin Study Area			
	Total	1,210,127	1,340,350
	Percent Rural	54	53
	Percent Urban	46	47
	Density	122.5	135.7
Yadkin - Pee Dee Economic Study Area			
	Total	1,776,162	1,899,168
	Percent Rural	60	58
	Percent Urban	40	42
	Density	94.7	101.3

Source: 15, 19

Table 2. Population Characteristics, 1960-1970 and 1970-1976, Yadkin - Pee Dee Economic Study Area.

Area	Percent Change Total Population		Percent Change Net Migration	
	1960-1970	1970-1976	1960-1970	1970-1976
Region 6	-1.1	3.7	-22.2	-2.7
Region 7	0.3	6.6	-16.5	0.6
Region 8	-4.3	13.8	-22.2	7.2
Pee Dee Study Area	-1.2	7.7	-19.6	2.9
Yadkin Main Stem Subarea	12.9	5.2	0.4	1.1
Lumber Subarea	-2.8	9.0	-17.9	2.1
Yadkin Study Area	10.8	5.6	-2.0	1.2
Yadkin - Pee Dee Economic Study Area	6.9	6.7	-7.6	1.7

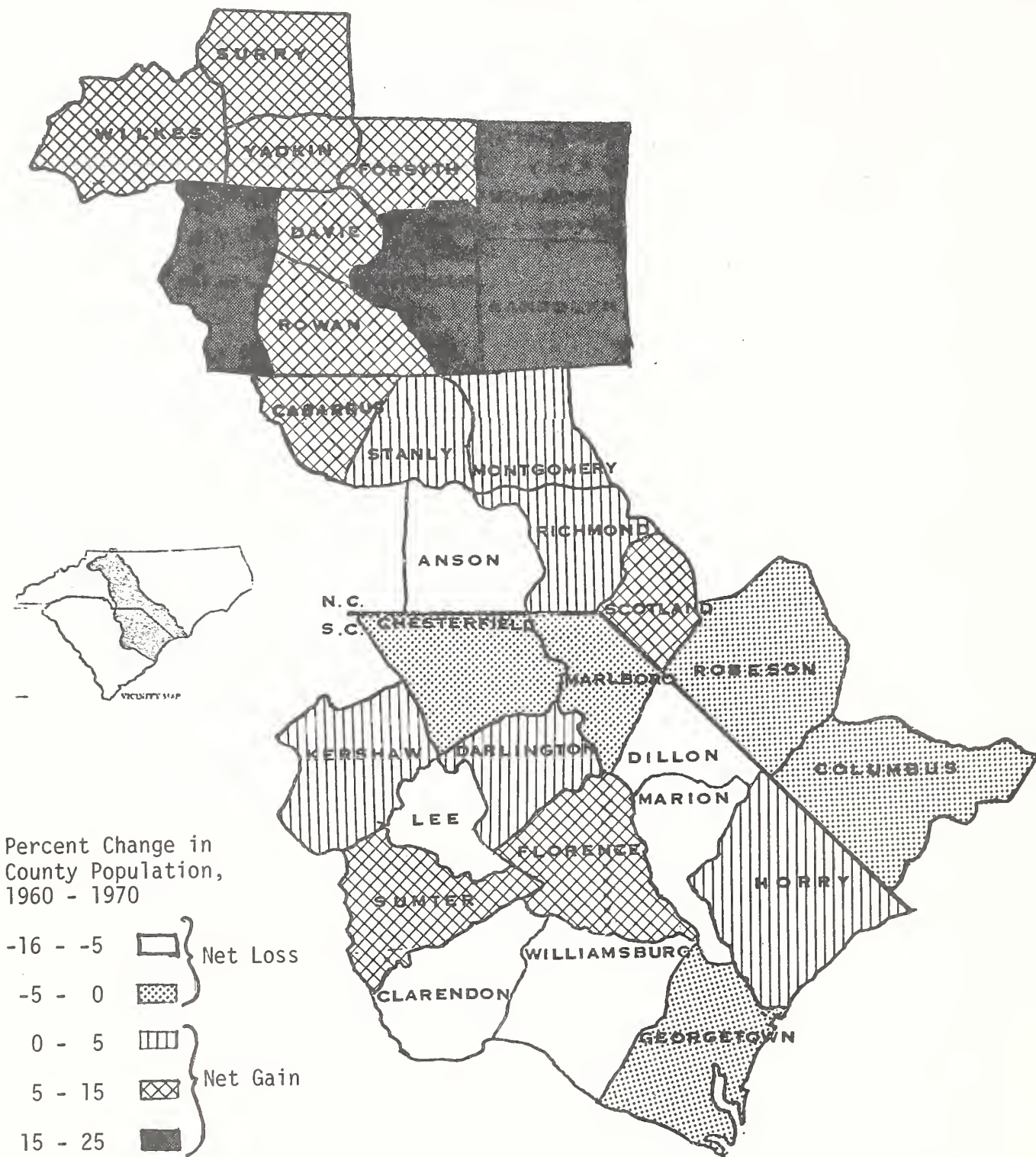
Source: 11, 12, 15, 19.

population was very large in the northern area of the Yadkin Main Stem subarea. Figures 5 and 6 show there was a substantial change in this trend by the 1970-1976 period. The net migration data in Table 2 and Figures 7 and 8 show more dramatically the change in population movement between the 1960-1970 and 1970-1976 time periods. The Charlotte and Greensboro-Winston Salem-High Point SMSA's appear to have had a particularly strong influence in the Study Area since the counties in or near them were the only counties to show positive migration between 1960 and 1970. None of the South Carolina counties in the Study Area showed a positive net migration during the decade.

However, from 1970-1976 counties on or near the coast showed as great an increase in net migration rate as the northern counties in the Study Area. During this time all counties in the Economic Study Area, except Lee County, showed an increase in total population. From 1960 to 1970 the Economic Study Area experienced a -7.6 percent change in net migration, while from 1970 to 1976 the trend reversed itself with a 1.7 percent gain in net migration.

Another prominent influence on population dynamics has been the historical non-white population in the Study Area. With the exception of Robeson County, most non-whites in the Study Area are blacks. Some data are available for non-whites and some for blacks, but they are roughly equivalent other than the exception just noted. Historically, the lower half of the Study Area has been composed of a high proportion of blacks (Table 3 and Figure 9). This situation is changing with a generally higher out-migration of blacks than whites in the lower half of the Study Area and a higher in-migration of blacks in the upper half of the Study Area (Figure 10). There are no data available for the 1970-1976 time

Figure 5



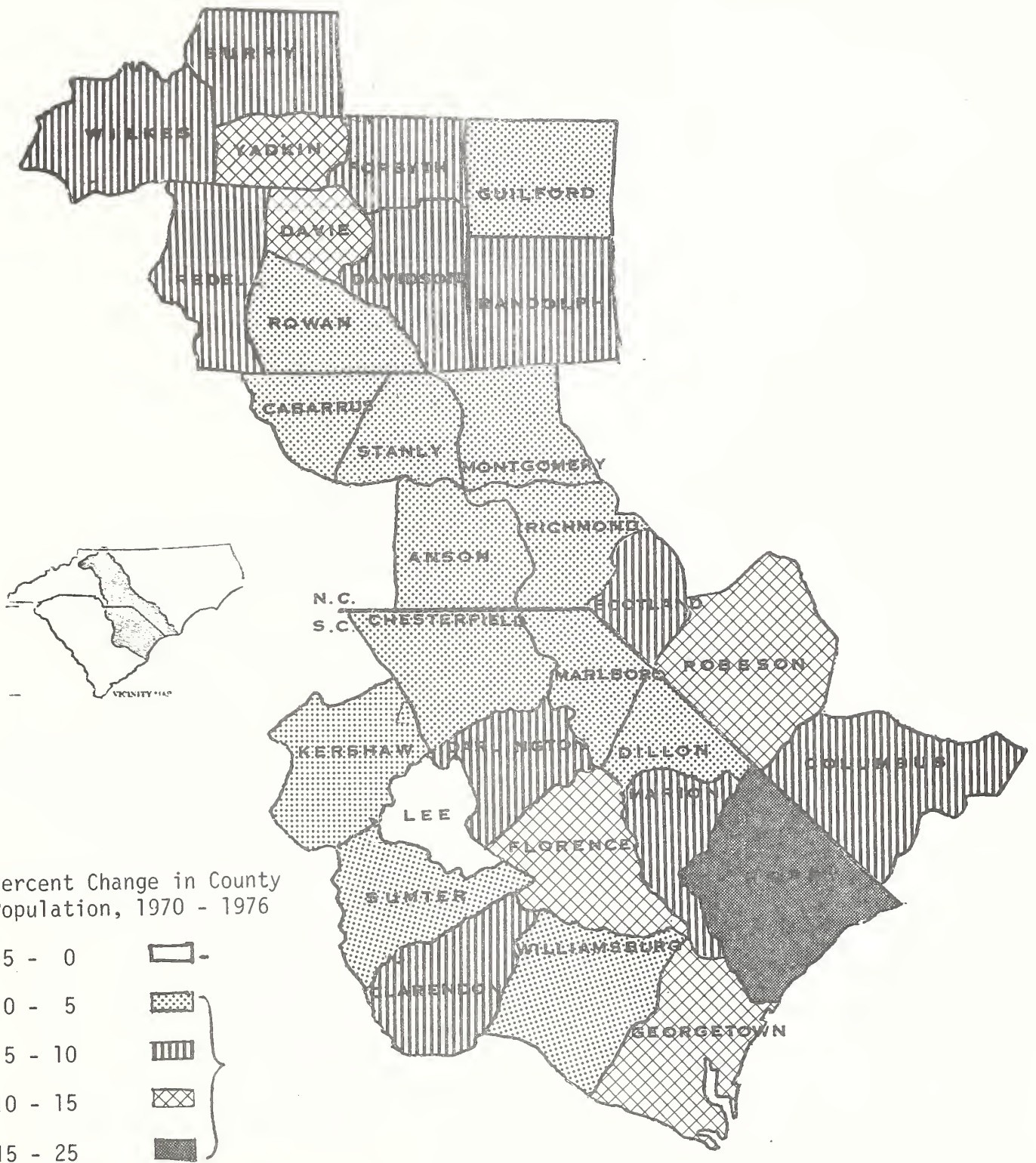
Source: 15, 19.

Yadkin-Pee Dee River Basin
NORTH CAROLINA, SOUTH CAROLINA AND VIRGINIA

0 10 20 30 40
MILES

COMPILED FROM 1960 U.S. STATE BUREAU
LARGEST ECONOMIC, CIVIC PROJECTIONS
GAIN LOSS BASED ON NORTH CAROLINA
COORDINATE SYSTEM, SOUTH CAROLINA
COORDINATE SYSTEM, NORTH ZONE

Figure 6



Source: 11, 12.

Yadkin-Pee Dee River Basin
NORTH CAROLINA, SOUTH CAROLINA AND VIRGINIA

10 20 30
MILES

COMPILED FROM U.S. 1:500,000 STATE MAPS
LARGEST COMPASS, CIVIL PROJECTIONS
GAGE TIDE BASED ON NORTH CAROLINA
COORDINATE SYSTEM, NORTH CAROLINA
COORDINATE SYSTEM, NORTH CAROLINA

Figure 7

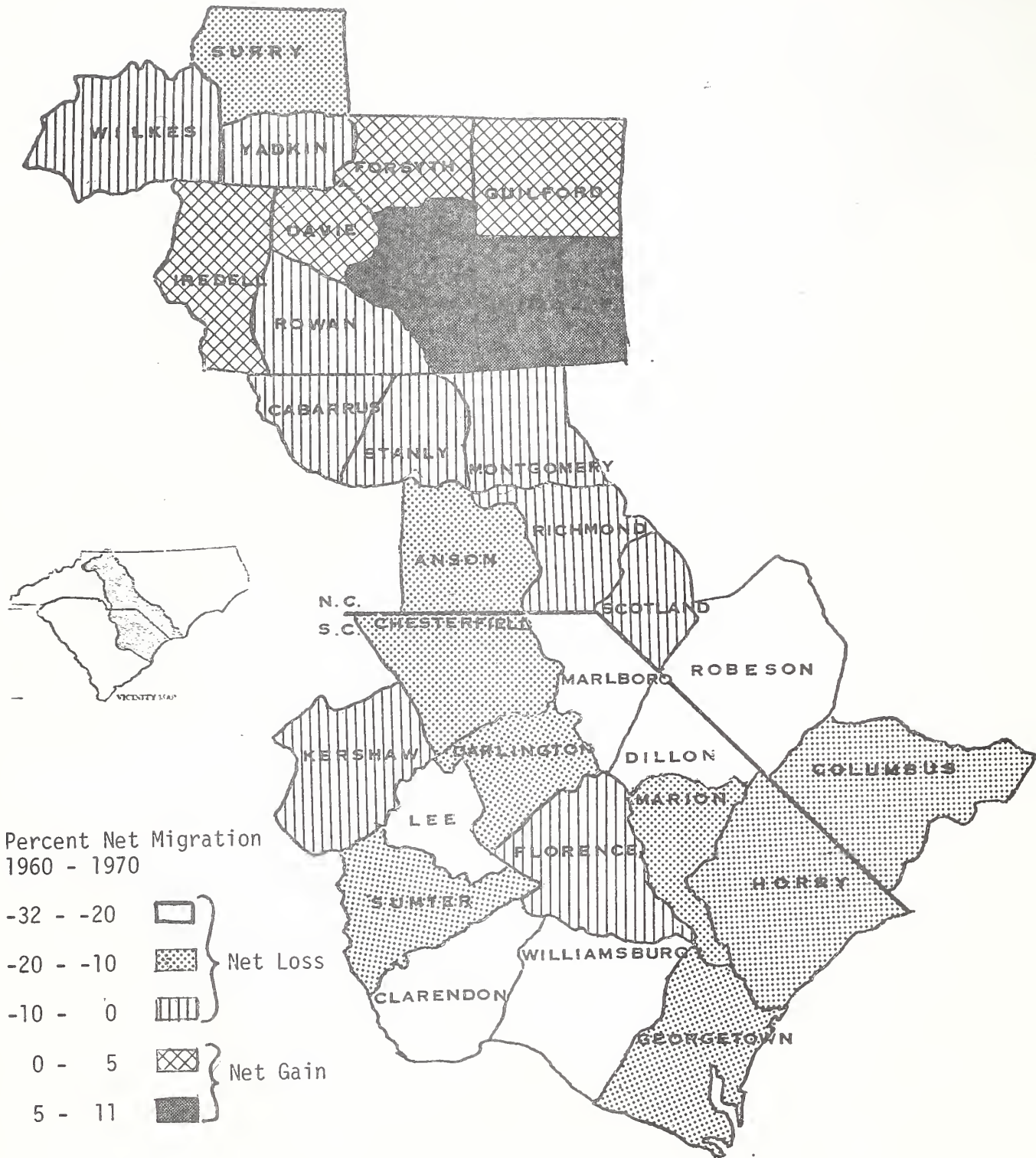
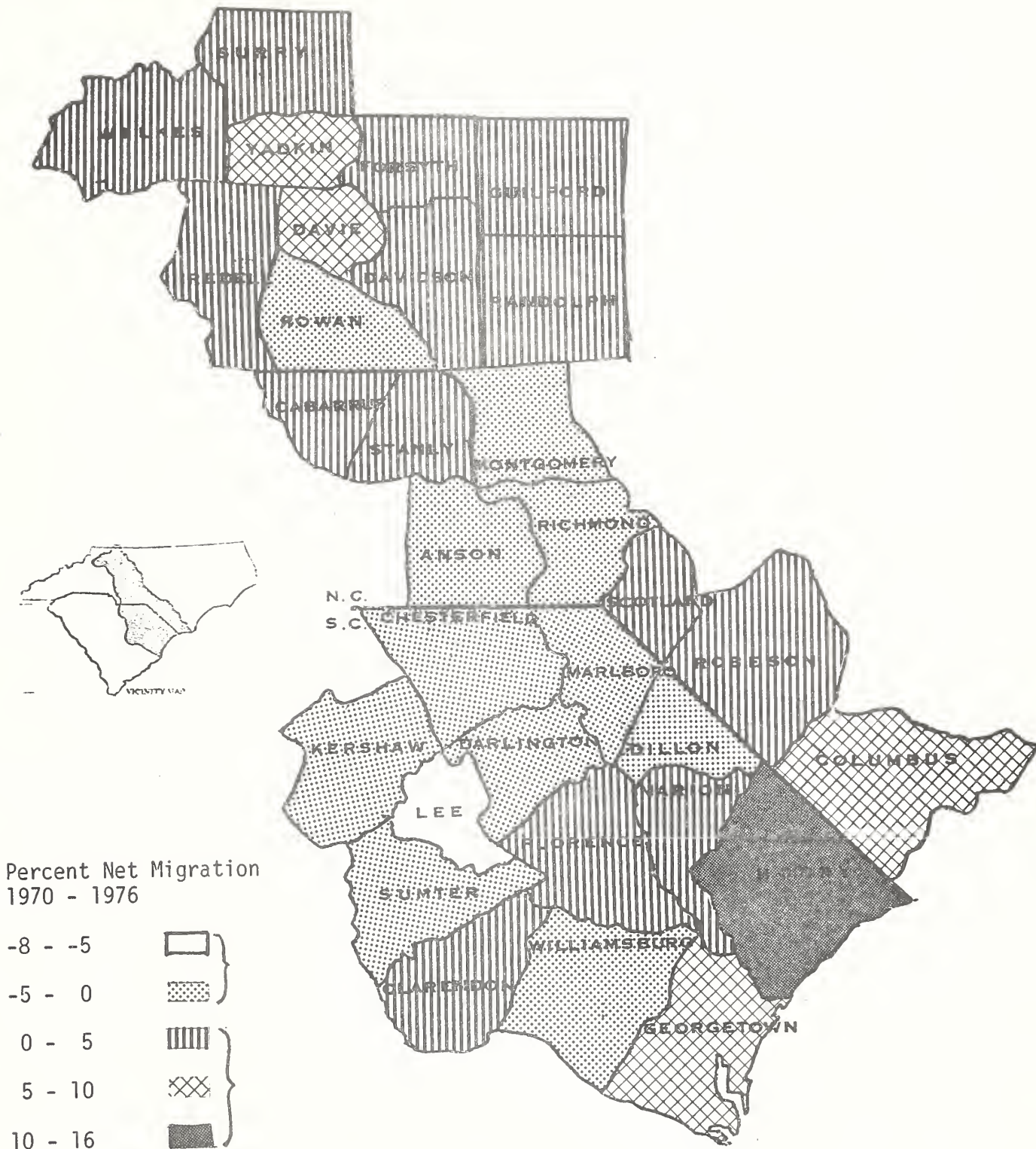


Figure 8



Source: 11, 12.

Yadkin-Pee Dee River Basin
NORTH CAROLINA, SOUTH CAROLINA AND VIRGINIA

0 10 20 30
MILES

COMPILED FROM AECIO 1980 STATE DATA
LARGEST ECONOMIC, ECONOMIC PRODUCTION
AND YIELD BASED ON NORTH CAROLINA
COORDINATE BY THE SOUTH CAROLINA
COORDINATE BY THE NORTH CAROLINA

Table 3. Components of population change by race, Yadkin - Pee Dee Economic Study Area, 1960 and 1970.

Area	Population		Change	
	1960	1970	Number	Percent
<u>Region 6</u>				
White	76826	87113	10287	13.4
Non-white	83022	70966	-12056	-14.5
<u>Region 7</u>				
White	143957	159509	15552	10.8
Non-white	118253	103075	-15178	-12.8
<u>Region 8</u>				
White	80340	83135	2795	3.5
Non-white	63637	54469	-9168	-14.4

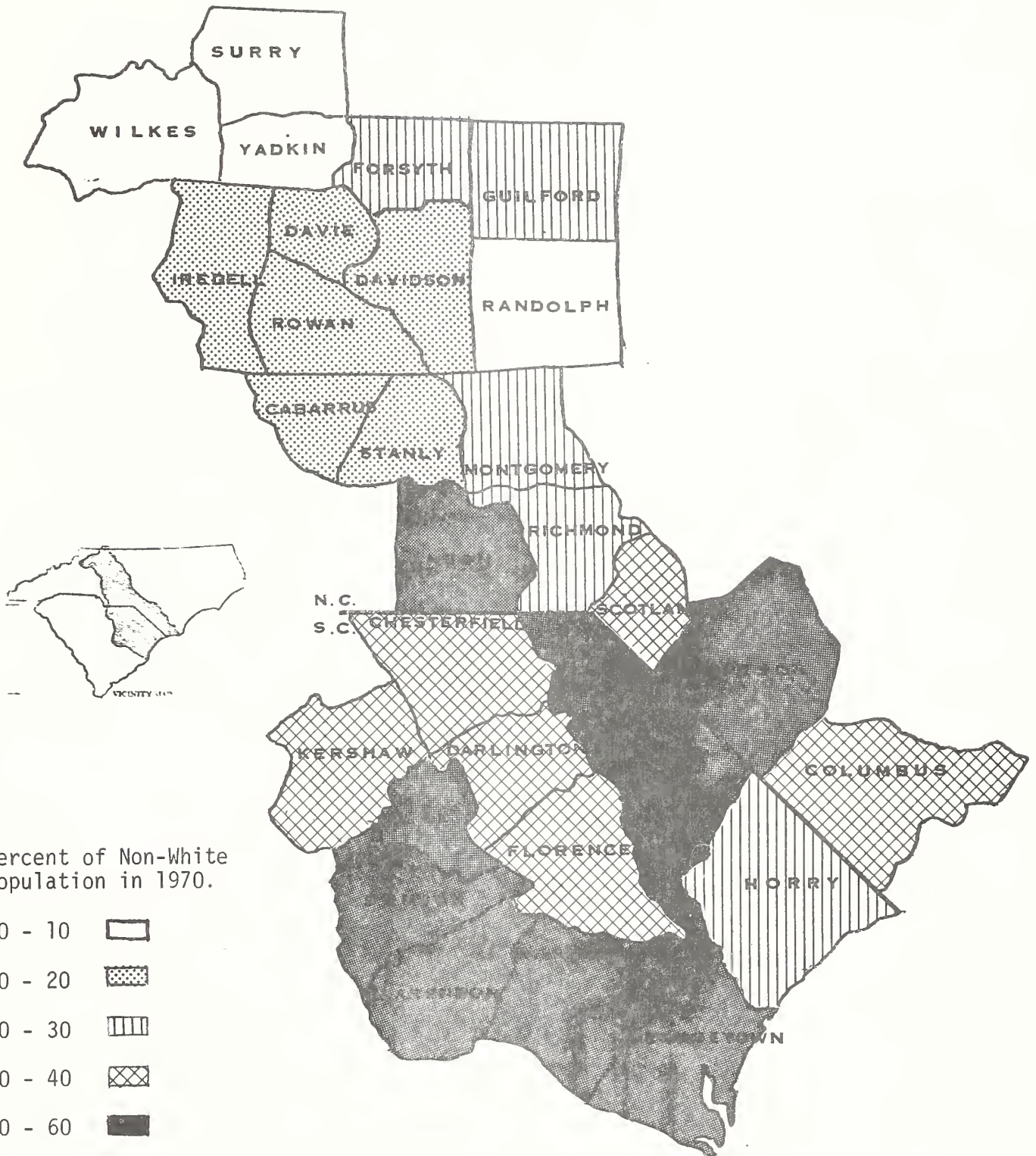
<u>Pee Dee Study Area</u>				
White	301123	329757	28634	9.5
Non-white	264912	228510	36402	-13.7
<u>Yadkin Main Stem Subarea</u>				
White	858440	973192	114752	13.4
Non-white	188429	208450	20021	10.6
<u>Lumber Subarea</u>				
White	82413	85033	2620	3.2
Non-white	80845	73675	-7170	-8.9

<u>Yadkin Study Area</u>				
White	940853	1058225	117372	12.5
Non-white	269274	282125	12851	4.8

<u>Yadkin - Pee Dee Economic Study Area</u>				
White	1241976	1387982	146006	11.8
Non-white	534186	510635	-23551	-4.4

Source: 15, 19

Figure 9



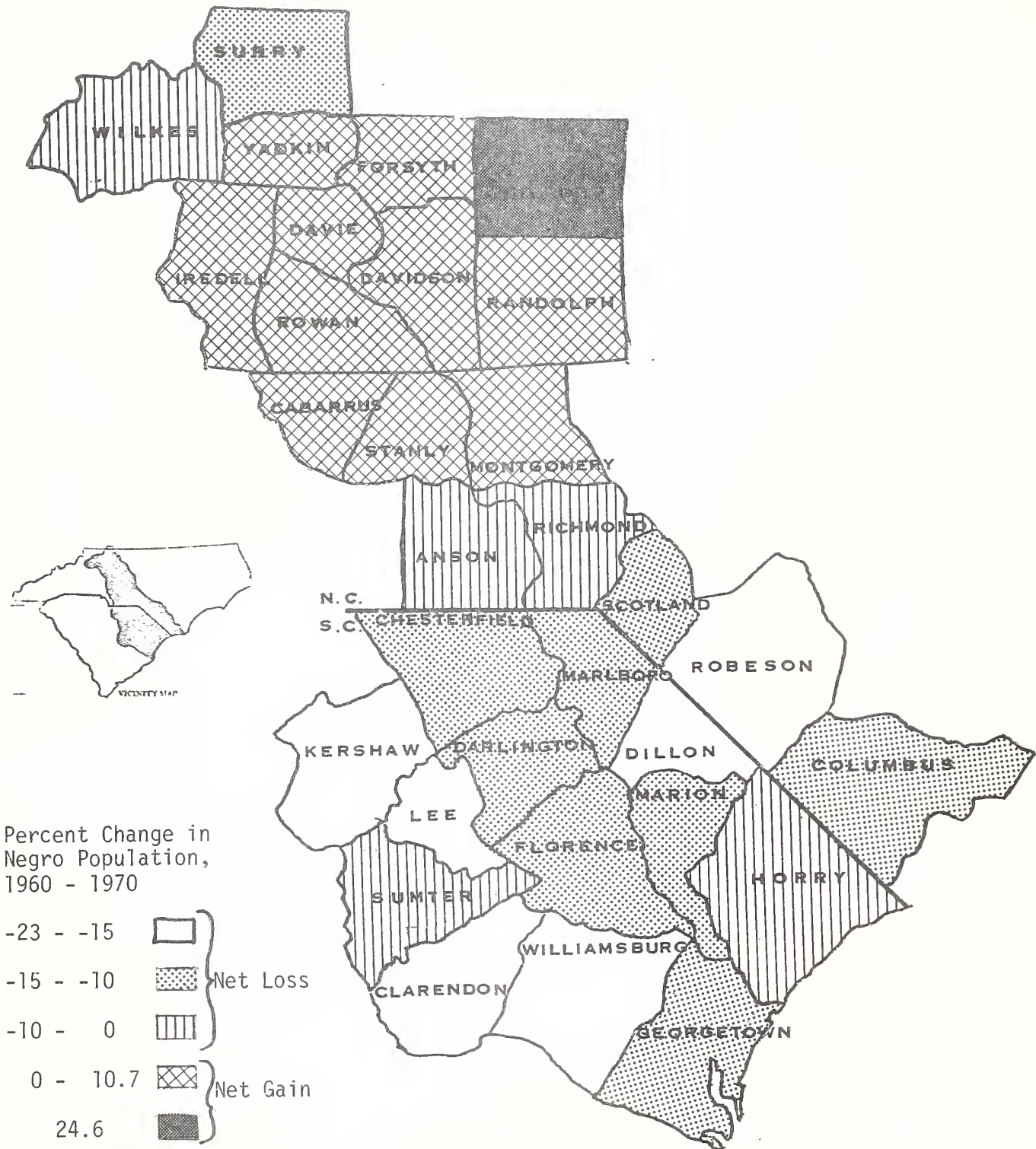
Source: 15, 19.

Yadkin-Pee Dee River Basin
NORTH CAROLINA, SOUTH CAROLINA AND VIRGINIA

0 10 20 30 40 50 60

COMPILED FROM U.S.C. 1960 RACE STATE BASE MAPS
LAMBERT CONFORMAL CONIC PROJECTION
GEOID TILES BASED ON NORTH CAROLINA
COORDINATE SYSTEM SOUTH CAROLINA
COORDINATE SYSTEM NORTH CAROLINA

Figure 10



Source: 15, 19.

Yadkin-Pee Dee River Basin
NORTH CAROLINA, SOUTH CAROLINA AND VIRGINIA

0 10 20
MILES

COMPILED FROM U.S.C. 1:50,000 AND STATE BASE MAPS
LAMBERT CONFORMAL, COTN. PROJECTION
GRID TICS BASED ON NORTH CAROLINA
COORDINATE 1911 BY S.C. SOUTH CAROLINA
COORDINATE SYSTEM, NORTH ZONE.

period, but with such a high proportion of non-whites in areas showing a change in population trends, it can be assumed that the non-white segment of the population has also undergone similar changes.

Education and Income Characteristics

The influence of the Charlotte and Greensboro-Winston Salem-High Point SMSA's can be seen in the population's educational and income characteristics. Tables 4 and 5 show the generally higher level of median education in the Yadkin Main Stem Subarea. Comparison of the change in median years of school between 1960 and 1970 indicates that the improvement was constant across all regions in South Carolina at 21 percent. The Yadkin Main Stem Subarea showed a 13 percent increase but started at a higher level. The Lumber Subarea started at the lowest level of any subarea, and had a 19 percent improvement.

Local conditions such as type of employment within the county, strength of the school board and school related expenditures have an influence on the median education level of the population. The median education level in turn has an influence on other population characteristics such as median income levels. Regression analysis of county median education levels, shown in Figure 11, and county median family income levels, Figure 12, shows a significant relationship between the two characteristics. From this county level analysis, changes in the median level of education accounted for 47 percent of the change in the median level of income.

With the strong relationship between median income and median school years it is not surprising that the median income figures in Table 6 show the highest income levels in the Yadkin Main Stem Subarea with lower income levels in the other less urbanized and less populated subareas where average median education levels were lower.

Table 4. Education Characteristics of Persons 25 Years and Older, Yadkin Study Area, 1960 and 1970.

Category	Yadkin Main Stem Subarea	Lumber Subarea	Yadkin Study Area
-----Percent-----			
No School			
1960	2.6	5.2	2.9
1970	1.8	3.2	2.0
Some Elementary			
1960	37.2	46.3	38.1
1970	26.0	33.4	26.9
Completed Elementary 8 yrs. + 1-2 yrs. high school			
1960	27.3	24.6	27.0
1970	35.1	33.9	34.9
Completed High School			
1960	19.7	13.7	19.1
1970	21.0	16.4	20.5
Some College			
1960	7.0	5.4	6.8
1970	7.9	6.7	7.7
College or more			
1960	6.2	4.8	6.1
1970	8.2	6.4	8.0
-----Number-----			
Total Population 25 yrs. +			
1960	556555	72648	629203
1970	640081	76107	716188
Median Years of school			
1960	9.3	7.9	9.1
1970	10.5	9.4	10.3

Source: 15, 19.

Table 5. Education Characteristics of Persons 25 Years and Older, Pee-Dee Study Area, 1960 and 1970.

Category	Region 6	Region 7	Region 8	Pee Dee Study Area
-----Percent-----				
No School				
1960	5.8	5.8	6.5	6.0
1970	3.0	3.9	3.5	3.6
Some Elementary				
1960	41.0	44.6	42.2	43.0
1970	30.2	29.9	33.5	30.8
Completed Elementary 8 yrs. + 1-3 yrs. high school				
1960	24.2	24.1	25.4	24.4
1970	29.8	34.6	31.8	32.6
Completed High School				
1960	16.7	14.1	15.3	15.1
1970	20.7	16.9	17.3	18.1
Some College				
1960	6.0	5.7	5.3	5.7
1970	7.8	7.3	6.8	7.3
College or more				
1960	6.3	5.7	5.3	5.8
1970	8.5	7.4	7.1	7.6
-----Number-----				
Total Population 25 yrs. +				
1960	68807	119342	61688	249837
1970	72547	121789	65875	260211
Median Years of School				
1960	8.4	8.0	8.1	8.1
1970	10.2	9.7	9.8	9.9

Source: 15, 19

Figure 11

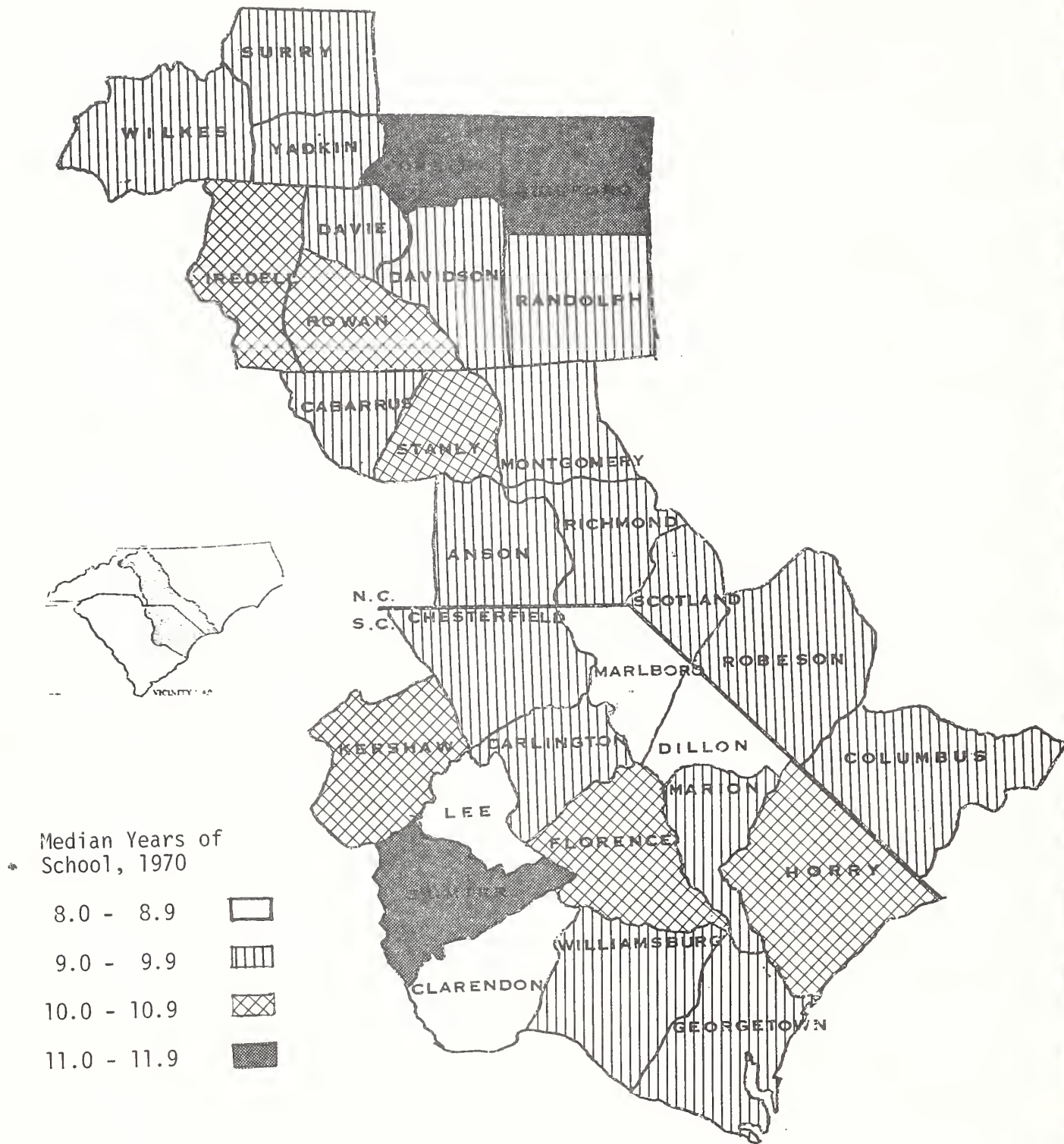


Figure 12

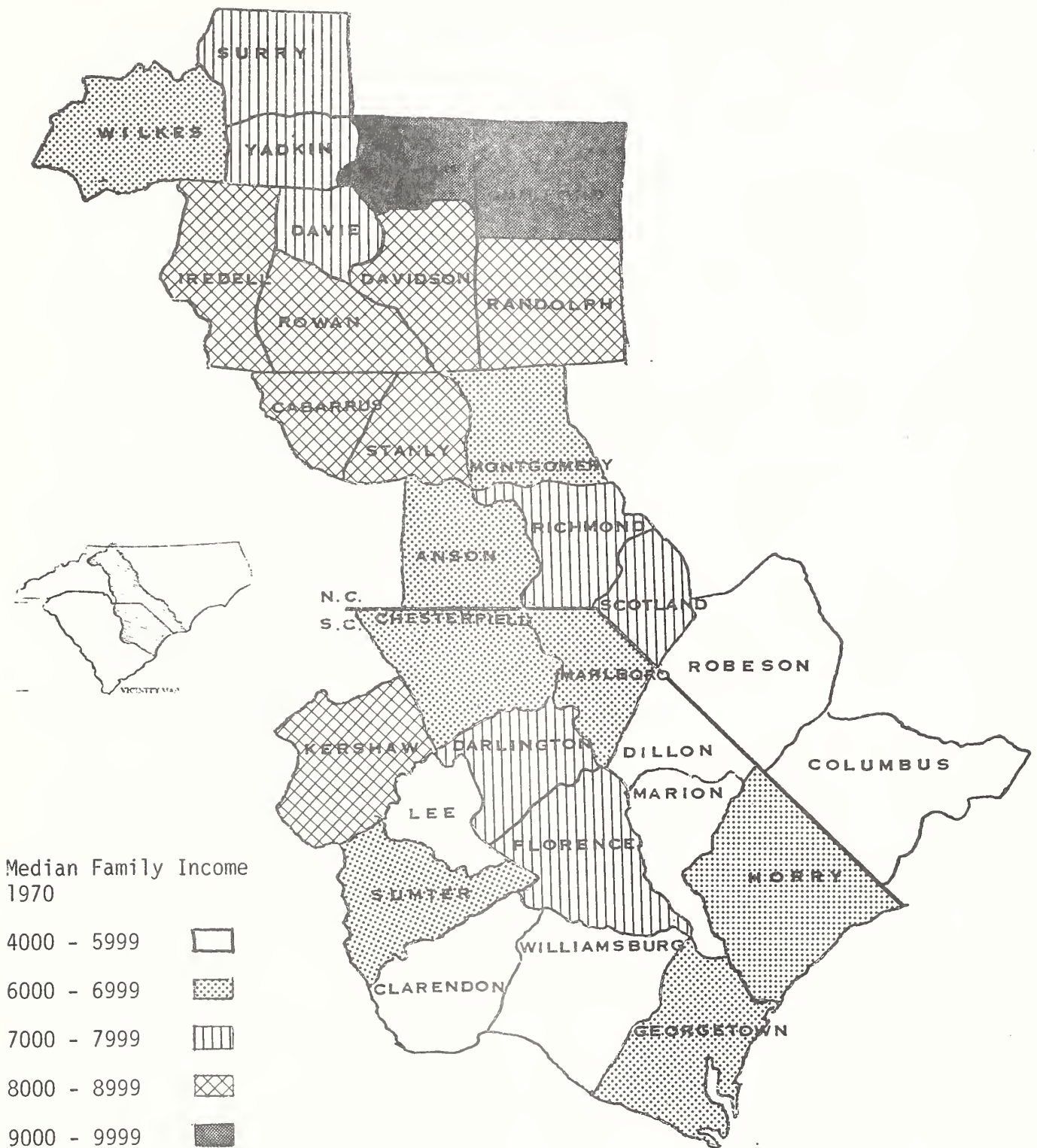


Table 6. Median Family Income and Number of Families, Yadkin - Pee Dee Economic Study Area, 1970.

Area	Number of Families Thousands	Median Family Income Dollars
Region 6	36.5	6403
Region 7	63.3	6741
Region 8	32.7	5876
Pee Dee Study Area	132.5	6434
Yadkin Main Stem Subarea	313.1	8632
Lumber Subarea	37.3	5960
Yadkin Study Area	350.4	8347
Yadkin - Pee Dee Economic Study Area	482.9	7822

Source: 19.

The per capita income data in Table 7 and family income data in Table 8 show a similar discrepancy between the income indicies and different subareas of the Study Area. For both measures, the Yadkin Main Stem shows significantly higher incomes than the other subareas with a similar percentage of families under the low income level. When compared with the U.S. per capita income in 1970, the Economic Study Area was 79 percent of the U.S. level. Figure 13 shows the wide range of per capita incomes as a percent of U.S. per capita income on a county basis. Figures 14 and 15 show the striking disparity between counties in the Study Area with regard to income levels. It is also important to note that even though the Yadkin Main Stem Subarea is far ahead of other subareas in income measures, there are counties within the subarea such as Wilkes and Anson that do not share fully in the general economic well being of the area (Figures 14 and 15).

Important differences within the subareas can also be seen in Figures 16 and 17 with respect to unemployment. The Yadkin Main Stem Subarea enjoyed the lowest unemployment rates in both 1970 and 1977, (Table 9) considerably below state and U.S. levels in both time periods, but several counties within the subarea had relatively high unemployment.

Housing Characteristics

Housing characteristics give an indication of the living conditions in the Study Area. The percentage change in housing from 1960 - 1970 shows the level of new housing in an area, while the number of persons per room provides a measure of how crowded the housing is. In general, those areas experiencing the greatest population growth (see Figure 5) have had the greatest growth in housing, Figure 18. The percent of housing with plumbing is also a factor that is supposed to reflect the quality of the housing, but this measure is somewhat misleading when urban and rural areas are

Table 7. Per Capita Income, Yadkin - Pee Dee Economic Study Area, North and South Carolina and United States, 1970.

Area	Per Capita Income	Percent of U.S. Per Capita Income
Region 6	\$1937	62
Region 7	2009	64
Region 8	1820	58
Pee Dee Study Area	\$1943	62
Yadkin Main Stem Subarea	\$2782	89
Lumber Subarea	1759	56
Yadkin Study Area	\$2661	85
Yadkin - Pee Dee Economic Study Area	\$2450	79
North Carolina	\$2474	79
South Carolina	\$2303	74
United States	\$3119	100

Source: 28.

Table 8. Families with Incomes Below Low-Income Level and Over \$10,000,
Yadkin - Pee Dee Economic Study Area, 1970.

Area	Number of Families Below Low-Income Level		Number of Families With Incomes Over \$10,000	
	Thousands	Percent	Thousands	Percent
Region 6	10.3	28.2	9.6	26.4
Region 7	15.9	25.0	17.2	27.2
Region 8	9.7	29.7	7.2	22.1
Pee Dee Study Area	35.9	27.1	34.1	25.7
Yadkin Main Stem Subarea	37.0	11.8	121.0	38.7
Lumber Subarea	10.8	29.0	8.3	22.1
Yadkin Study Area	47.8	13.7	129.3	36.9
Yadkin - Pee Dee Economic Study Area	83.7	17.3	163.4	33.8
North Carolina	211.2	16.3	436.3	33.8
South Carolina	120.1	19.1	208.1	33.1
United States	5475.0	10.7	24151.6	47.2

Source: 28.

Figure 13

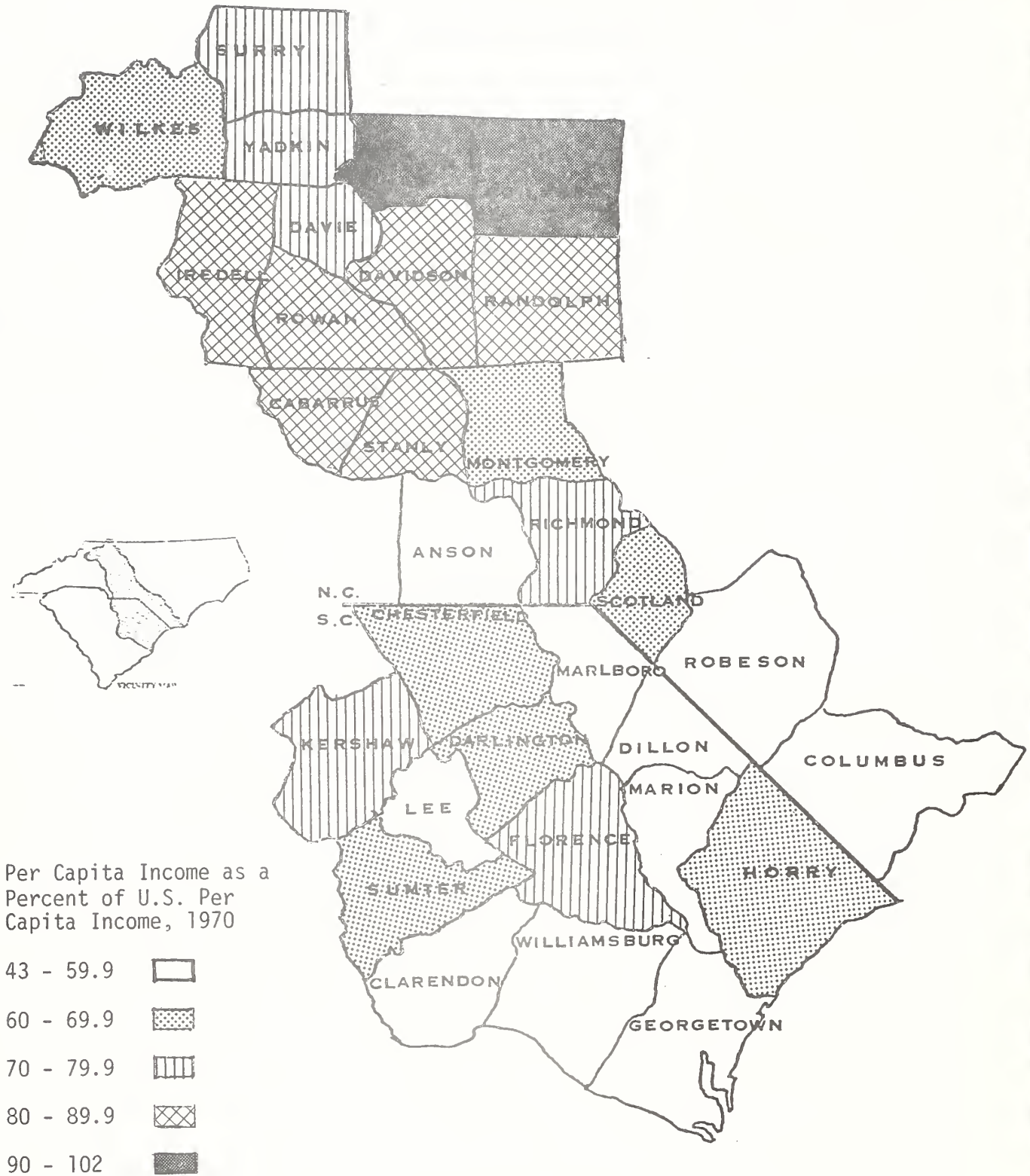


Figure 14

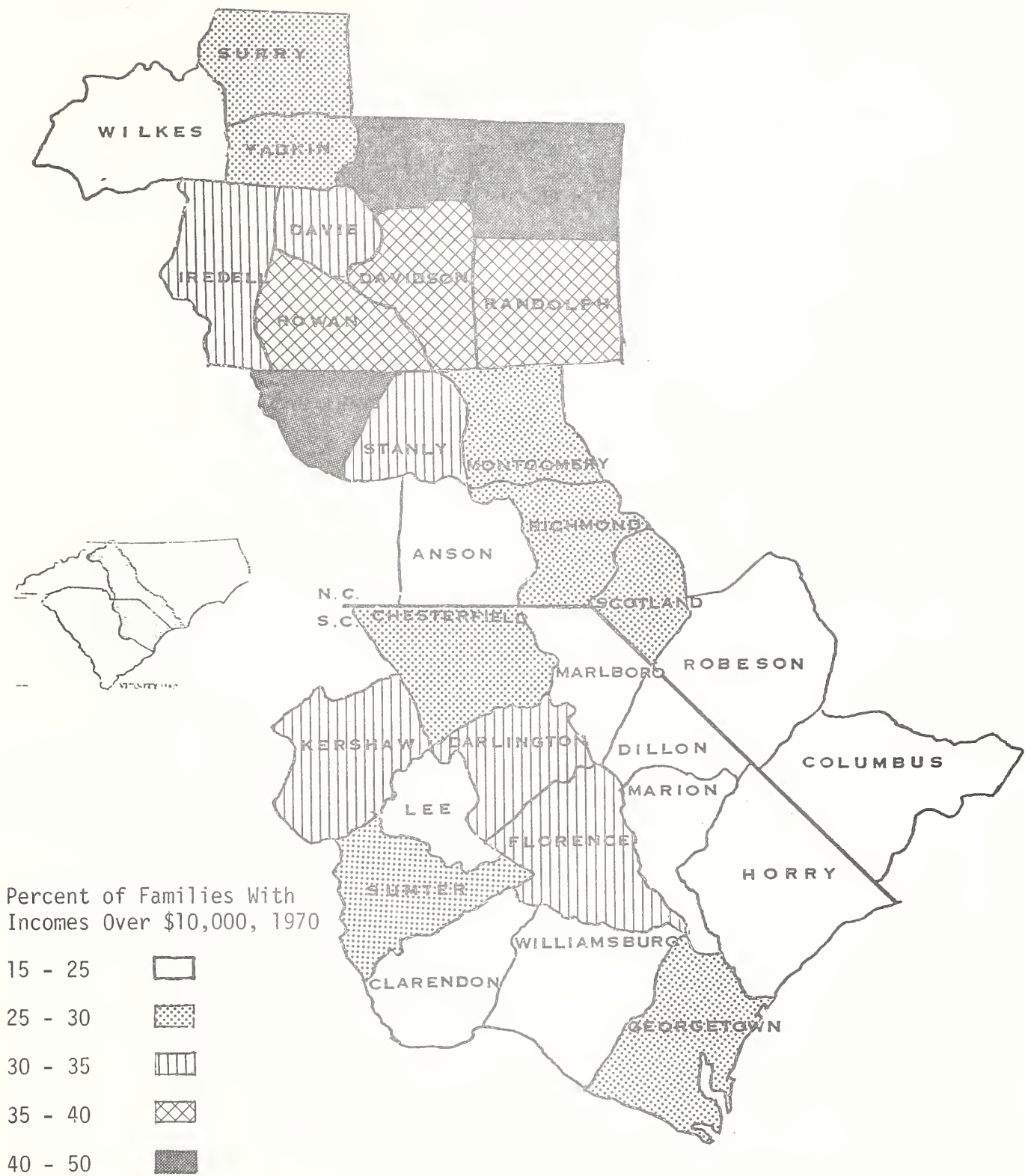
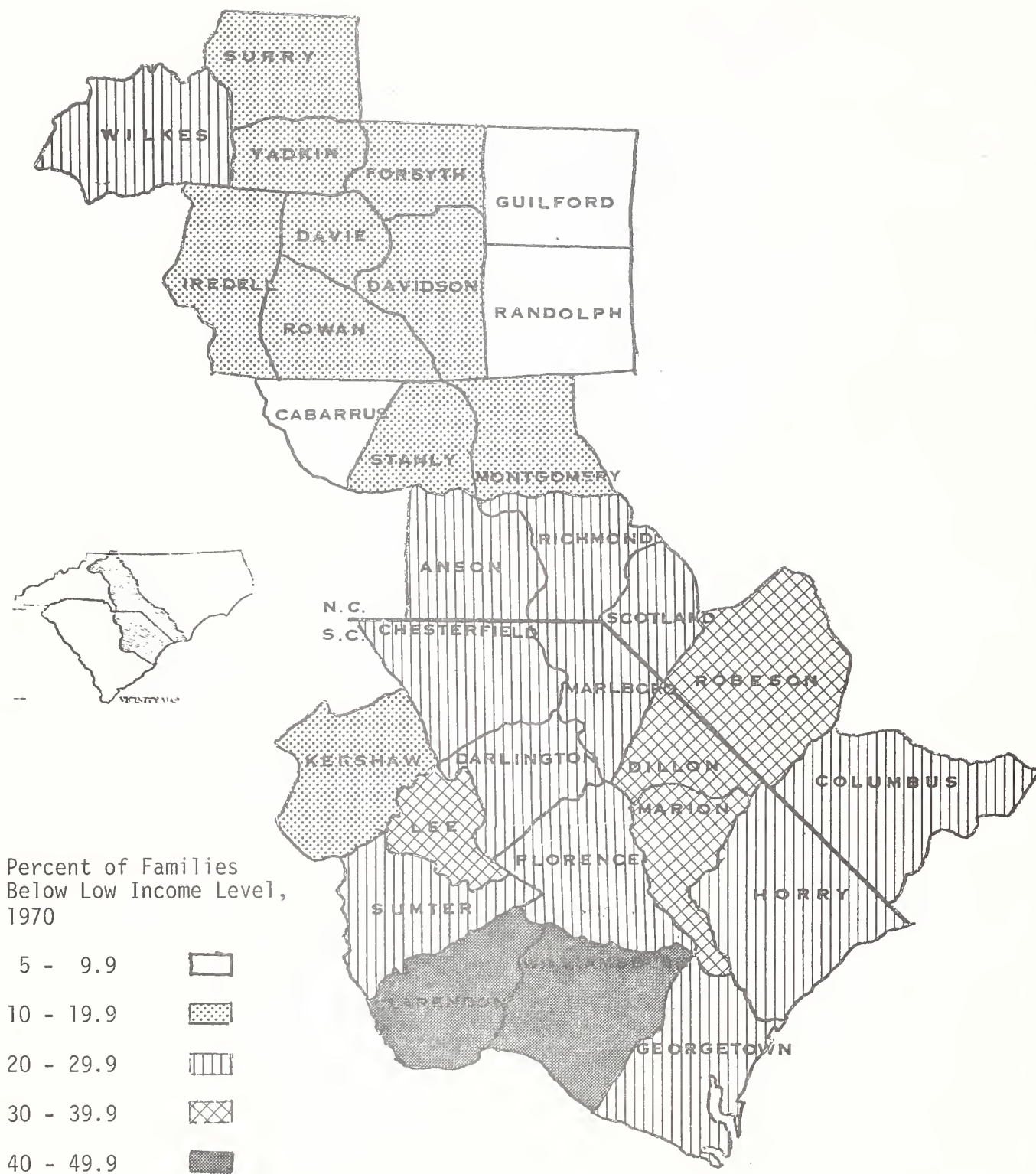


Figure 15



Source. 28.

Yadkin-Pee Dee River Basin
NORTH CAROLINA, SOUTH CAROLINA AND VIRGINIA

0 10 20 30 40 50
MILES

COMPILED FROM U.S. CENSUS YEAR BY STATE DATA
LAMBERT CONFORMAL CONIC PROJECTION
GRID TIES BASED ON NORTH CAROLINA
COORDINATE SYSTEM
COORDINATE SYSTEM NORTH ZONE

Figure 16

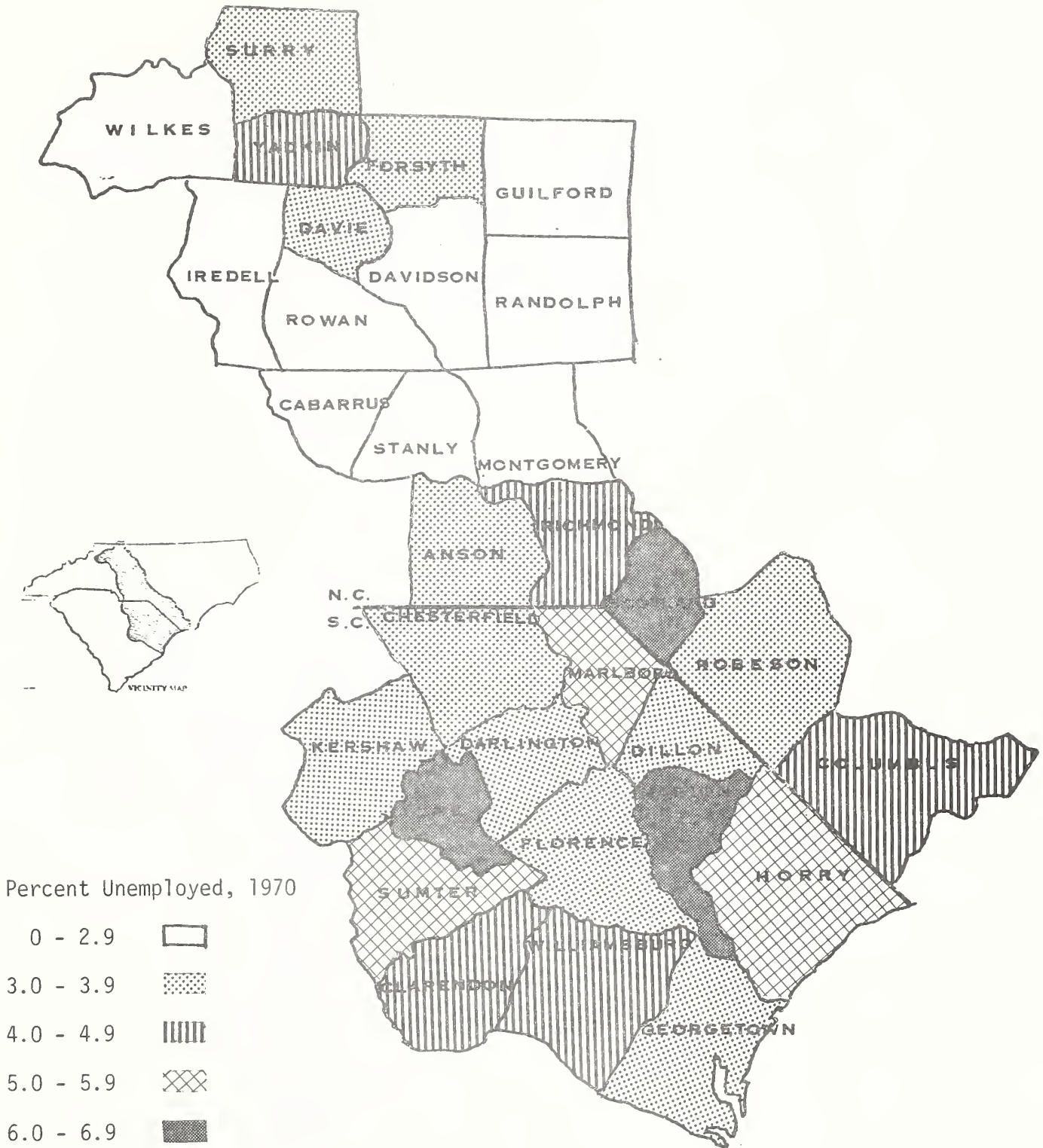
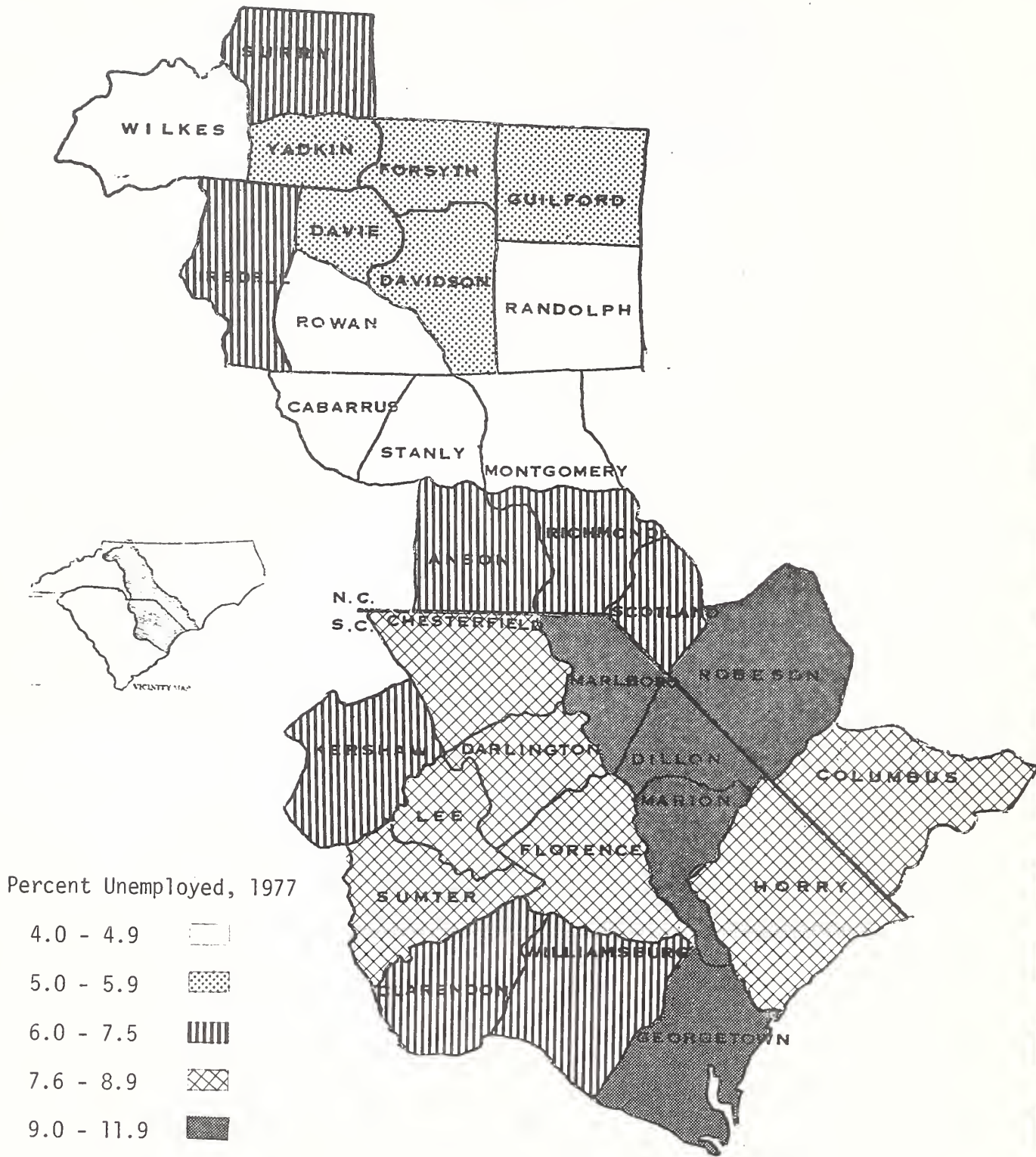


Figure 17



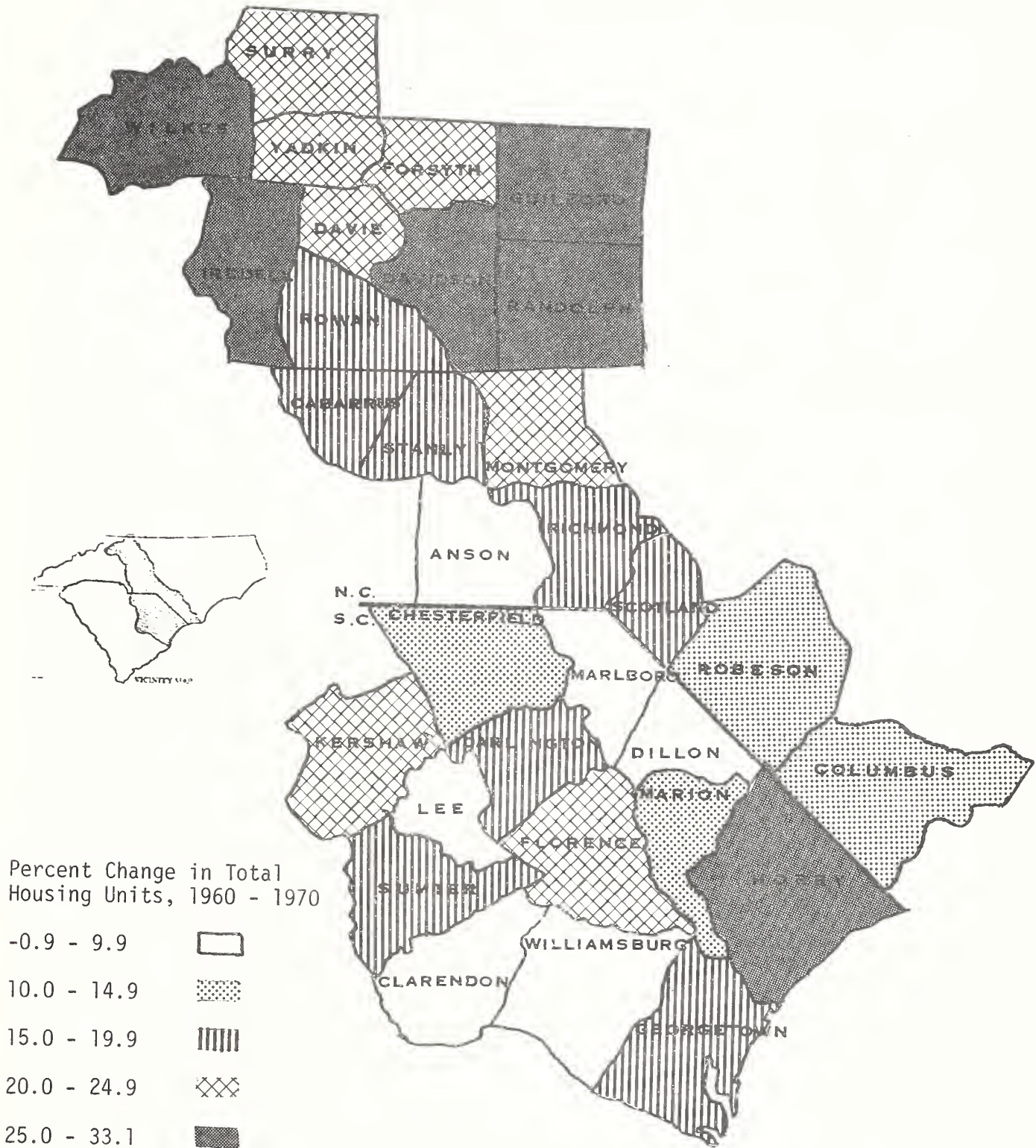
Source: 1,6.

Yadkin-Pee Dee River Basin
NORTH CAROLINA, SOUTH CAROLINA AND VIRGINIA

0 10 20 30
MILES

COMPILED FROM U.S.C. 1980 STATE BUREAU
LARGEST COMMUNITY DATA COLLECTION
AND 1980 BUREAU OF ECONOMIC ANALYSIS
CUMULATIVE 1970-1980 SOUTH CAROLINA
COORDINATE SYSTEM: NORTH ZONE

Figure 18



Source: 10.

Yadkin-Pee Dee River Basin
NORTH CAROLINA, SOUTH CAROLINA AND VIRGINIA

0 10 20 30 40 50
MILES

COMPILED FROM 1960 AND 1970 CENSUS DATA
LARGEST CENSUS, ETHNIC PROPORTION
AND 1970 DATA ON NORTH CAROLINA
COORDINATE SYSTEM OF THE SOUTH CAROLINA
COORDINATE SYSTEM, NORTH EDGE

Table 9. Unemployment, Yadkin - Pee Dee Economic Study Area, 1970 and 1977.

Area	Percent Unemployed	
	1970	1977
Region 6	5.0	7.9
Region 7	4.6	8.7
Region 8	4.2	8.5
Pee Dee Study Area	4.5	8.5
Yadkin Main Stem Subarea	2.9	5.2
Lumber Subarea	4.7	8.7
Yadkin Study Area	3.2	5.6
Yadkin - Pee Dee Economic Study Area	3.7	6.4
North Carolina	3.4	5.9
South Carolina	3.8	7.2
United States	4.4	7.0

Source: 1, 6, 10.

Table 10. Housing, Yadkin - Pee Dee Economic Study Area, North and South Carolina and United States, 1970.

Area	Year-Round Units		Occupied Year-Round Units					With 1.01 or more persons/room	
	Total	Percentage Change 1960-1970	Average persons/unit	Percent Owner occupied	Percent lacking some or all plumbing	Total Percent	Percent with all plumbing		
Region 6	46535	13.9	3.7	60.5	27.4	16.7	43.1		
Region 7	79794	14.6	3.5	62.8	25.3	15.5	46.5		
Region 8	44324	18.8	3.6	64.7	25.6	14.8	46.3		
Pee Dee Study Area	170653	15.4	3.6	62.6	26.0	15.6	46.0		
Yadkin Main Stem Subarea	384712	23.7	3.2	68.2	9.8	8.8	76.7		
Lumber Subarea	46702	13.8	3.6	61.5	27.2	16.9	44.6		
Yadkin Study Area	431414	22.6	3.2	67.5	11.7	9.7	73.2		
Yadkin - Pee Dee Economic Study Area	602067	20.5	3.3	66.1	15.7	11.4	65.4		
North Carolina	1,619,548	25.2	3.3	65.4	13.9	10.0	63.7		
South Carolina	804,858	21.7	3.5	66.1	16.8	12.0	57.1		
United States	67,699,084	19.9	3.2	62.9	5.5	8.0	86.2		

Source: 10.

compared. Table 10 shows housing characteristics for the Study Area, and again, conditions appear to be best in the Yadkin Main Stem Subarea, worst in the Lumber Subarea with the Pee Dee Study Area somewhat above the Lumber Subarea and quite similar among the three regions. Since most counties outside the Yadkin Main Stem Subarea are primarily rural, these housing figures may be misleading with respect to the quality of housing, especially in the importance that is often attached to plumbing.

Summary

The general education, income and unemployment picture in the Yadkin - Pee Dee Economic Study Area is one of considerably better conditions in all these characteristics in the Yadkin Main Stem Subarea than in the other subareas. Conditions for all characteristics are slightly better in Regions 6 and 7 than in Region 8 and the Lumber Subarea has the poorest showing overall. But as mentioned, there are significant differences among counties within each of the subareas.

Those counties in or near SMSA's reported higher incomes than those counties further from metropolitan areas. One possible explanation for the population growth from 1960 - 1970 of counties in the upper half of the Economic Study Area, north of Anson and Richmond Counties, was the relatively higher incomes there. Although median family incomes and per capita incomes at the state level were similar in both North and South Carolina, the Pee Dee Study Area was well below state levels. This suggests that income opportunities outside the lower half of the Yadkin - Pee Dee Economic Study Area were drawing the population away, while similar forces within the upper half of the area were attracting new inhabitants from 1960 - 1970. Whether this trend will continue after recovery from the recession period of the mid '70's remains to be seen. However, 1970 - 1976 net migration

figures for the Study Area show significant changes from the 1960 - 1970 period.

Unemployment reached a peak in most counties in 1975 and 1976. Although the 1977 unemployment rate shows a steady improvement as the national economy improves, the situation is still worse than conditions in 1970. The relationship between economic conditions and migration patterns is not clear, but it is expected that migration trends of the mid '70's will continue well into the 1980's in the Yadkin - Pee Dee Economic Study Area.

ECONOMIC CHARACTERISTICS

Employment by Major Groups

From 1960 to 1970 in the Yadkin - Pee Dee Economic Study Area, the only major employment group to show a decline in job numbers was the agriculture, forestry and fisheries group. Tables 11 and 12 give numbers and percentages in each group, while Figures 19 and 20 present percentages graphically for 1960 and 1970. The manufacturing sector is the most important source of employment in the study area, particularly in the Yadkin Study Area where it provides 43 percent of all employment. During the 1960 - 1970 period, agricultural employment fell by 50 percent to 4 percent of all employment in the Yadkin Study Area. In the Pee Dee Study Area, manufacturing accounted for 29 percent of all employment in 1970 while agricultural employment fell from 29 percent in 1960 to 10 percent in 1970.

Compared with the composition of employment at the national level, the Yadkin Study Area has a much higher level of employment associated with manufacturing, a lower level of employment associated with services and a slightly lower level of wholesale and retail trade and public administration employment. The Pee Dee Study Area, when compared with national employment composition, has a higher percentage of employment in the agriculture and forestry group and in the contract construction group. Other groups have slightly lower percentages of employment.

Employment in Fast Growth and High Wage Industries

Two important indicators of an area's economic vitality are level of employment in fast growth industries and proportion of employment in high wage industries. A comparison of these two factors to national averages serves to give one indication of the general employment condition of the

Table 11. Employment by Major Groupings, Number and Percent of Yadkin Study Area, North Carolina and U.S., 1960 and 1970.

		Agriculture forestry and fisheries	Contract construction	Manufacturing	Transportation communications and utilities	Wholesale and retail trade	Finance insurance and real estate	Services	Public Administration
<u>Yadkin Main-Stem</u>									
No.	1960	25,598	23,896	181,527	20,393	62,536	11,148	71,567	9,778
%	1970	14,288	30,617	227,986	28,111	83,962	17,930	77,926	12,050
	1960	6.1	5.7	43.3	4.9	14.9	2.7	17.1	2.3
	1970	2.8	6.0	44.3	5.5	16.3	3.5	15.2	2.3
<u>Lumber Subarea</u>									
No.	1960	18,676	2,467	8,446	1,419	7,049	766	8,938	1,139
%	1970	7,605	4,233	18,425	1,916	8,718	1,339	11,896	1,334
	1960	36.7	4.8	16.6	2.8	13.8	1.5	17.5	2.2
	1970	13.7	7.6	33.2	3.5	15.7	2.4	21.4	2.4
<u>Study Area</u>									
No.	1960	44,274	26,363	189,973	21,812	69,585	11,914	80,505	10,917
%	1970	21,893	34,850	246,411	30,027	92,680	19,269	89,822	13,384
	1960	9.4	5.6	40.4	4.6	14.8	2.5	17.1	2.3
	1970	3.8	6.1	43.3	5.3	16.3	3.4	15.8	2.3
<u>North Carolina</u>									
No.	1960	208,018	98,224	509,193	74,586	257,257	42,722	312,865	49,762
%	1970	103,805	133,545	704,306	109,063	347,589	42,549	442,156	69,830
	1960	13.0	6.1	31.7	4.6	16.0	2.7	19.5	3.1
	1970	5.2	6.7	35.5	5.5	17.5	2.1	22.3	3.5
<u>United States</u>									
No.	1960	4,349,884	3,815,937	18,382,448	4,458,141	12,661,997	2,694,630	14,419,308	3,202,890
%	1970	2,840,488	4,572,235	19,837,208	5,186,101	15,372,880	3,838,387	20,073,860	4,201,682
	1960	6.8	6.0	28.7	7.0	19.8	4.2	22.5	5.0
	1970	3.7	6.0	26.1	6.8	20.3	5.1	26.4	5.5

Source: 14, 18.

Table 12. Employment by Major Groupings, Number and Percent of Pee - Dee Study Area, South Carolina and U.S., 1960 and 1970.

	Agriculture forestry and fisheries	Contract construc- tion	Manu- facturing	Transportation communications and utilities	Wholesale and retail trade	Finance insurance and real estate	Services	Public Administration
Region 6								
No. 1960	11992	1346	9624	1183	7105	931	9824	1571
1970	4477	8163	11786	1586	8462	1310	12494	2040
% 1960	27.5	3.1	22.1	2.7	16.3	2.1	22.5	3.6
1970	8.9	16.2	23.4	3.2	16.8	2.6	24.8	4.1
Region 7								
No. 1960	23171	4810	18446	3586	13451	1958	16106	1816
1970	9127	5661	34338	4826	16353	2666	19886	2426
% 1960	27.8	5.8	22.1	4.3	16.1	2.3	19.3	2.2
1970	9.6	5.9	36.0	5.1	17.2	2.8	20.9	2.5
Region 8								
No. 1960	13743	1962	6491	1301	6575	911	7549	1161
1970	5253	5746	8528	1900	8939	1403	11356	1577
% 1960	34.6	4.9	16.4	3.3	16.6	2.3	19.0	2.9
1970	11.8	12.9	19.1	4.3	20.0	3.1	25.4	3.5
Study Area								
No. 1960	48906	8118	34561	6070	27131	3800	33479	4548
1970	18862	19575	54652	8312	33754	5379	43736	6043
% 1960	29.4	4.9	20.7	3.6	16.3	2.3	20.1	2.7
1970	9.9	10.3	28.7	4.4	17.7	2.8	23.0	3.2
South Carolina								
No. 1960	95636	51784	265301	32484	133854	22412	175213	25634
1970	39788	70252	345423	46271	159306	31569	223425	36957
% 1960	11.9	6.5	33.1	4.1	16.7	2.8	21.8	3.2
1970	4.2	7.4	36.3	4.9	16.7	3.3	23.4	3.7
United States								
No. 1960	4349884	3815937	18382448	4458141	12661997	2694630	14419308	3202890
1970	2840488	4572235	19837208	5186101	15372880	3838387	20073860	4201682
% 1960	6.8	6.0	28.7	7.0	19.8	4.2	22.5	5.0
1970	3.7	6.0	26.1	6.8	20.3	5.1	26.4	5.5

Source: 14, 18.

Figure 19. Percent Employment by Major Groupings Yadkin Study Area, 1960 and 1970.

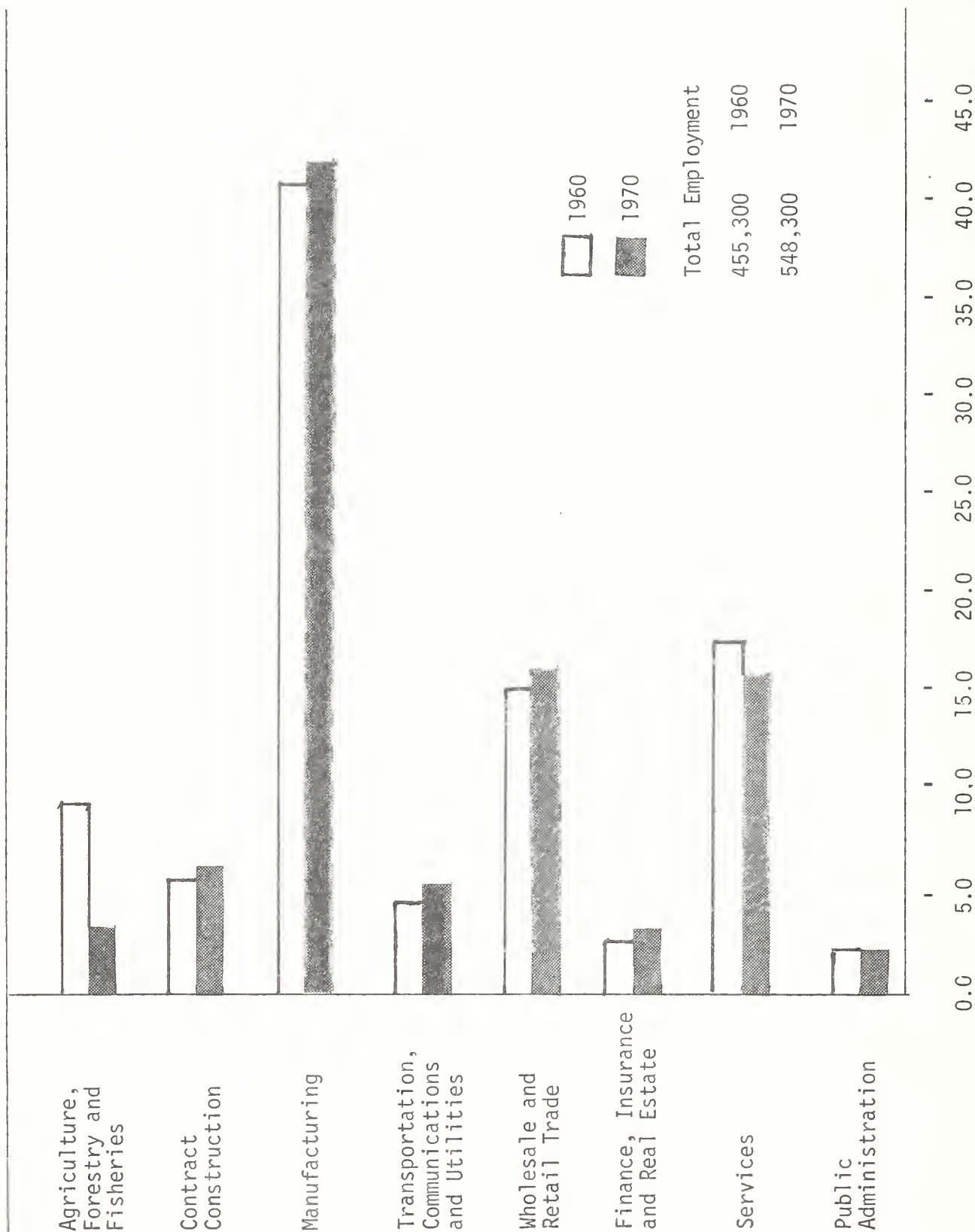
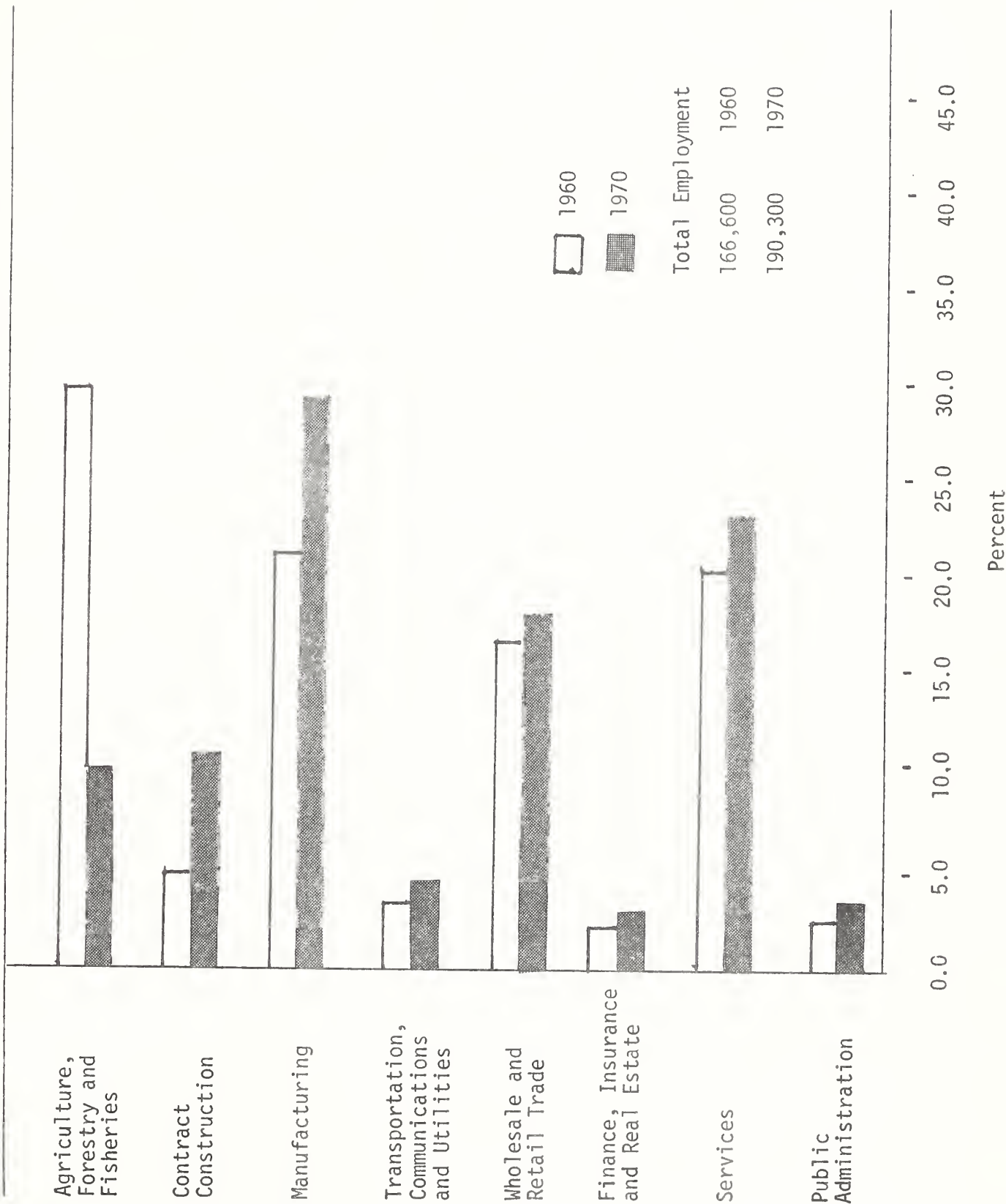


Figure 20. Percent Employment by Major Groupings Pee Dee Study Area, 1960 and 1970.



Study Area. A fast growth industry is one developing faster than the national average for all industries. Admittedly, the composition of employment in the Yadkin - Pee Dee Study Area may have changed considerably since the data were collected in 1970, especially as a result of the nationwide recession in the mid 1970's. With that note of caution in mind, Tables 13 and 14 give the percent of employment in fast growth industries in the Yadkin Study Area and Pee Dee Study Area. Total employment in fast growth industries was below the U.S. average of 60.2 percent in both study areas and the Yadkin Study Area total is below the North Carolina average while the Pee Dee Study Area total is only slightly above the South Carolina total. In the Yadkin Study Area, only construction, other non durable goods and trucking services are above national averages. In the Pee Dee Study Area, only construction, other non durable goods and other personal services have a higher percentage than the national average. This would indicate that employment growth in most industries in both study areas generally lags behind the national employment growth rates for that industry.

The amount of employment in high wage industries may serve as an indicator of the general industrial wage level of an area. If employment in high wage industries is above the national average, the area may be considered to have a high wage level. Employment in high wage industries in the Yadkin Study Area at 28.3 percent is significantly below the national average of 42.5 percent and slightly below the North Carolina average of 29.4 percent (Table 15). Construction and trucking services and warehousing are the only high wage industries with a higher percentage in the Study Area than the national average.

The Pee Dee Study Area, with 32.4 percent of the employment in high wage industries is above the Yadkin Study Area, slightly ahead of South

Table 13. Percent of Civilian Employment, Fast Growth Industries, Yadkin Study Area, 1970.

Industry	U. S.	N.C.	Study Area	Yadkin Main Stem	Lumber Sub Area
Construction	6.0	6.7	6.1	6.0	7.6
Machinery Manufacturing except electrical	2.6	1.3	1.2	1.3	0.4
Electrical Machinery equipment & supplies	2.5	1.9	2.3	2.5	0.5
Other Durable Goods	2.7	1.8	1.9	1.9	1.8
Other Non-Durable Goods	3.1	4.1	5.3	5.2	6.0
Trucking Services & warehousing	1.4	1.8	2.1	2.2	0.7
Other Transportation	1.5	0.8	0.7	0.7	0.3
Communications	1.4	1.2	1.0	1.0	1.0
Utilities & Sanitary services	1.7	1.3	1.0	1.0	1.1
Wholesale Trade	4.1	3.7	3.6	3.7	2.3
Eating & Drinking Places	3.0	1.9	1.7	1.7	1.5
Business & Repair services	3.1	2.1	1.9	2.0	1.7
Other Personal Services	3.2	3.1	2.7	2.7	2.7
Entertainment & Recreational services	0.8	0.6	0.5	0.5	0.3
Hospitals & Health services	5.5	4.1	3.4	3.5	2.8
All Educational Services	8.0	7.2	6.3	6.1	8.3
Welfare, Religious & Non-profit	1.5	1.3	1.2	1.2	1.0
Legal, Engineering & mixc. prof. services	2.6	1.7	1.4	1.4	1.2
Public Administration	5.5	3.5	2.3	2.3	2.4
Total Fast Growth	60.2	50.1	46.6	46.9	43.8

Source: 19.

Table 14. Percent of Civilian Employment, Fast Growth Industries, Pee - Dee Study Area, 1970.

Industry	U. S.	S. C.	Study Area	Region 6	Region 7	Region 8
Construction	6.0	7.4	10.2	16.1	5.9	12.8
Machinery Manufacturing except electrical	2.6	1.6	0.8	0.5	1.2	0.3
Electrical Machinery equipment & supplies	2.5	1.4	2.4	1.4	3.3	1.5
Other Durable Goods	2.7	2.2	1.2	1.2	1.2	1.2
Other Non-Durable Goods	3.1	3.3	4.9	2.6	5.9	5.3
Trucking Services & warehousing	1.4	1.0	0.9	0.7	1.1	0.5
Other Transportation	1.5	0.7	0.6	0.5	0.6	0.6
Communications	1.4	1.0	0.9	0.8	0.9	1.2
Utilities & Sanitary services	1.7	1.6	1.3	1.1	1.4	1.6
Wholesale Trade	4.1	3.1	2.4	2.0	2.7	2.3
Eating & Drinking Places	3.0	1.9	2.1	1.8	1.7	3.1
Business & Repair services	3.1	2.0	1.7	1.4	2.0	1.6
Other Personal Services	3.2	3.2	3.6	3.6	2.6	5.7
Entertainment & Re- creational services	0.8	0.5	0.6	0.7	0.4	1.1
Hospitals & Health services	5.5	4.0	3.4	3.1	3.7	3.0
All Educational Services	8.0	7.3	6.7	7.5	6.0	7.5
Welfare, Religious & Non- profit	1.5	1.3	1.1	1.0	1.1	1.2
Legal, Engineering & mixc. prof. services	2.6	1.7	1.4	1.8	1.2	1.3
Public Administration	5.5	3.9	3.2	4.0	2.5	3.5
Total Fast Growth	60.2	49.1	49.4	51.8	45.4	55.3

Source: 19.

Table 15. Percent of Civilian Employment in High Wage Industries, Yadkin Study Area, 1970.

Industry	U.S.	N.C.	Study Area	Yadkin Main Stem	Lumber Sub Area
Mining	0.8	0.2	0.2	0.2	0.1
Construction	6.0	6.7	6.1	6.0	7.6
Metal Industries	3.5	0.3	1.5	1.6	0.6
Machinery Except Electrical	2.6	1.3	1.2	1.3	0.4
Electrical Machinery, equipment	2.5	1.9	2.3	2.5	0.5
Transportation Equipment	2.8	0.5	0.5	0.5	0.8
Food and Kindred products	1.8	1.6	1.7	1.8	1.3
Printing and Publishing	1.6	0.8	0.8	0.9	0.3
Chemicals and Allied products	1.3	1.1	0.9	1.0	0.7
Railroad and railway express	0.8	0.4	0.5	0.6	0.3
Trucking Services and warehousing	1.4	1.8	2.1	2.2	0.7
Other transportation	1.5	0.8	0.7	0.7	0.3
Communications	1.4	1.2	1.0	1.0	1.0
Utilities and Sanitary services	1.7	1.3	1.0	1.0	1.1
Wholesale Trade	4.1	3.7	3.6	3.7	2.3
Finance, Insurance, and real estate	3.3	2.1	2.1	2.1	1.3
Public Administration	5.5	3.5	2.3	2.3	2.4
Total	42.5	29.4	28.3	29.0	21.8

Source: 19.

Carolina with 32.3 percent but considerably below the national average of 42.5 percent (Table 16). Construction at 10.2 percent is considerably above the national average of 6.0 percent, but the construction industry is one that can fluctuate widely over time. Chemicals and allied products is the other high wage industry that is higher in the study area, 1.9 percent, than at the national level, 1.3 percent. It is lower than the state level of 2.3 percent.

The comparisons with high wage industries indicates that the wage rates in the Yadkin - Pee Dee Study Area would tend to be lower than wage rates at the national level.

Location Quotients

Location quotients are an indicator of an industry's importance in an area compared to the rest of the nation. While the fast growth and high wage comparisons look at specific types of industries, location quotient analysis is more general and considers a wider range of industry groups. The location quotient is the percentage employed in the basin divided by the national industry percentage. If an industry has a location quotient greater than 1.00, the industry is more important regionally than nationally. The location quotients for the Yadkin - Pee Dee Study Area in Table 15 show advantages for the area in agriculture and forestry, contract construction and manufacturing. The agriculture and forestry employment group is declining throughout the nation and, as was mentioned earlier, contract construction often fluctuates considerably over time. It is only in the manufacturing employment group that the Study Area has an important advantage relative to other areas of the country.

Table 16. Percent of Civilian Employment in High Wage Industries, Pee-Dee Study Area, 1970.

Industry	U. S.	S. C.	Study Area	Region 6	Region 7	Region 8
Mining	0.8	0.2	0.2	0.2	0.2	0.1
Construction	6.0	7.4	10.2	16.1	5.9	12.8
Metal Industries	3.5	1.2	1.7	2.2	1.2	2.0
Machinery Except Electrical	2.6	1.6	0.8	0.5	1.2	0.3
Electrical Machinery, equipment	2.5	1.4	2.4	1.4	3.3	1.5
Transportation Equipment	2.8	1.5	0.5	0.6	0.7	0.1
Food and Kindred products	1.8	1.0	1.6	2.6	1.4	0.7
Printing and Publishing	1.6	0.6	0.4	0.4	0.4	0.2
Chemicals and Allied products	1.3	2.3	1.9	5.2	0.5	1.3
Railroad and railway express	0.8	0.5	0.6	0.1	1.0	0.3
Trucking Services and warehousing	1.4	1.0	0.9	0.7	1.1	0.5
Other transportation	1.5	0.7	0.6	0.5	0.6	0.6
Communications	1.4	1.0	0.9	0.8	0.9	1.2
Utilities and Sanitary services	1.7	1.6	1.3	1.1	1.4	1.6
Wholesale Trade	4.1	3.1	2.4	2.0	2.7	2.3
Finance, Insurance, and real estate	3.3	3.3	2.8	2.6	2.8	3.1
Public Administration	5.5	3.9	3.2	4.0	2.5	3.5
Total	42.5	32.3	32.4	41.0	27.8	32.1

Source: 19.

Table 17. Location Quotients, Major Employment Groups, Yadkin - Pee Dee Economic Study Area and United States, 1970.

Employment Group	Importance of Area to United States						Yadkin - Pee Dee Economic Study Area
	Yadkin Main Stem Subarea	Lumber Subarea	Yadkin Study Area	Region 6	Region 7	Region 8	
Agriculture, Forestry and Fisheries	.76	<u>3.70</u>	<u>1.03</u>	<u>2.41</u>	<u>2.59</u>	<u>3.19</u>	<u>1.46</u>
Contract Construction	1.00	<u>1.27</u>	<u>1.02</u>	<u>2.70</u>	.98	<u>2.15</u>	<u>1.19</u>
Manufacturing	<u>1.70</u>	<u>1.27</u>	<u>1.66</u>	.90	<u>1.38</u>	.73	<u>1.52</u>
Transportation, Communications and Utilities	.81	.51	.78	.47	.75	.63	.74
Wholesale and Retail Trade	.80	.77	.80	.83	.85	.99	.82
Finance, Insurance and Real Estate	.68	.47	.67	.51	.55	.61	.64
Services	.58	.81	160	.94	.79	.96	.67
Public Administration	.42	.44	.42	.75	.45	.64	.47

(Underlined values greater than 1 indicate the type of employment is more important regionally than nationally.)

Source: 14, 18.

Shift-Share Analysis

Factors underlying study area employment trends may be identified by using a technique called shift-share analysis. This technique shown in Tables 18 and 19, separates an area's employment growth into three components and attempts to measure the contribution of each.

The first component of employment growth is termed the national effect. This component measures the amount which each study area industry would have grown between 1960 and 1970, if the industry had grown at the national growth rate for all industries which was 18.4 percent. For example, Yadkin Study Area construction employment in 1960 was 36,363. If increased by 18.4 percent, construction would show a net increase of 4,851 jobs and is shown in Table 18 as the national growth effect. The national growth effect is isolated in order to focus on the two remaining components which together account for the regional shifts in employment. The second component of the shift-share technique is known as industrial mix. This component identifies whether employment in a specific industry is growing faster or slower than the national average for all employment. A negative number indicates an industry which is considered a slow growth area nationally and its effect on overall growth is negative. The third component is termed the regional or study area share effect. This is computed by applying the difference between the percentage change in employment in an industry in the study area and the percentage change in the same industry nationally. An industry that is growing faster in the study area than in the nation as a whole, will add to the area's overall growth relative to that of the nation. On the average, the national growth effect accounted for 91.3 percent of the employment growth in the Yadkin Study Area from 1960 to 1970. The particular industry mix in the Yadkin Study Area, at the national rate

Table 18. Shift-Share Analysis, Yadkin Study Area, 1960 and 1970.

Industry	Civilian 1960	Employment 1970	Change 1970 - 1960	National Growth	Industry Mix	Regional Share
Agriculture, Forestry and Fisheries	44,274	21,893	-22,381	8,260	-23,642	-6,999
Construction	26,363	34,850	8,487	4,918	290	3,279
Manufacturing	189,973	246,411	56,438	35,441	-20,517	41,514
Transportation, Utilities and Communications	21,812	30,027	8,215	4,069	-523	4,669
Wholesale and Retail Trade	69,585	92,680	23,095	12,982	1,879	8,234
Finance, Insurance, and Real Estate	11,914	19,269	7,355	2,223	2,836	2,296
Services	80,505	89,822	9,317	15,019	16,504	-22,206
Public Administration	10,917	13,384	2,467	2,037	1,365	-935
Total Civilian Employment	455,343	548,336	92,993	84,949	-21,808	29,852

Source: 15, 19

Table 19. Shift-Share Analysis, Pee Dee Study Area, 1960 and 1970.

Industry	Civilian Employment		National Growth	Industry Mix	Regional Share
	1960	1970 - 1960			
Agriculture, Forestry and Fisheries	48,906	-30,044	9,125	-26,116	-13,053
Construction	8,118	11,457	1,515	89	9,853
Manufacturing	34,561	20,091	6,449	-3,733	17,375
Transportation, Utilities and Communications	6,070	2,242	1,133	-146	1,255
Wholesale and Retail Trade	27,131	6,623	5,063	733	827
Finance, Insurance, and Real Estate	3,800	1,579	709	904	-34
Services	33,479	10,257	6,247	6,863	-2,853
Public Administration	4,548	1,495	849	932	-286
Total Civilian Employment	166,613	23,700	31,090	-20,474	13,084

Source: 15, 19.

of change, would have led to a considerable decrease in employment growth. Strong regional employment growth in manufacturing, wholesale and retail trade, and transportation, utilities, and communications more than offset the decline in employment growth from the industry mix. The Yadkin Study Area showed much slower growth in the services sector than would normally be expected.

The Pee Dee Study Area experienced particularly strong employment growth in manufacturing, construction, and transportation, utilities and communications while also growing more slowly than expected in services. Employment in agriculture and forestry fell more rapidly than the national average in both study areas.

The overall picture for the Yadkin and Pee Dee Study Areas indicates that total employment grew faster in the Study Area than it did in the nation as a whole, given the composition of the industry mix in both basins. The strongest source of employment growth in both areas is the manufacturing sector. Shift-share analysis, which is dynamic analysis over a ten year period, substantiates the information from the static analyses that consider the nature of employment in the Yadkin - Pee Dee Study Area as it was in 1970.

Summary

The most important economic sector for employment in the Yadkin - Pee Dee Economic Study Area was the manufacturing sector with 39.6 percent of all employment in 1970. The services and wholesale and retail trade sectors were next in importance with 17.6 percent and 16.6 percent of employment respectively. Agricultural employment fell from 12.3 percent in 1960 to 5.4 percent in 1970. Shift-share analysis for the 1960 - 1970 period shows that for the area's industry mix there was faster growth in

total employment in the area than in the nation as a whole. The majority of employment growth took place in the manufacturing sector with growth much slower than the national rate in the services sector and the decline in agricultural employment even more rapid than nationally.

A static look at employment in high wage and fast growth industries in 1970 shows that total employment in fast growth industries was below the U.S. average in the Study Area. Employment in high wage industries was significantly below the U.S. average indicating a lower than national average wage rate. Location quotients show that manufacturing, construction and agriculture and forestry are proportionally more important for total employment in the Study Area than nationally.

AGRICULTURAL CHARACTERISTICS

Agriculture is an important industry in the Yadkin - Pee Dee Economic Study Area, especially in terms of the land resources devoted to farming, but also because of the value of agricultural production and employment. Tables 20 and 21 show that in both the Yadkin and Pee Dee Study Areas, the total number of farms and land in farms declined from 1969 to 1974. Accompanying the decline in farm numbers was an increase in average farm size. This is the same as national trends which show farm numbers in general declining throughout the country. Part of the change is due to a redefinition of "farm" in the 1974 agriculture census, but the long term trend has been declining farm numbers.

Tables 22 and 23 show a classification of farms based on gross farm sales. These tables show a decline in percentage of farms with sales below \$10,000 in the Pee Dee Study Area and a decline in the percentage of farms with sales below \$5,000 in the Yadkin Study Area. These figures are also somewhat deceptive since a farm with the same quantity of items to sell in both time periods might fall into two different classes because of changes in product prices. Although the movement of farms to higher economic classes may be exaggerated, the tendency toward fewer and larger farms in the Yadkin - Pee Dee Study Area is seen in these tables.

The Yadkin Study Area has more land in farms than the Pee Dee Study Area, but the latter has much more land in harvested cropland (Tables 20, 21, 24, 25). Both areas experienced a large increase in crop acreage for soybeans between 1969 and 1974. During that time period acreage of other major crops was relatively constant. The Pee Dee acreage of harvested cropland was 58 percent of the total for the Yadkin - Pee Dee Economic Study Area and 48 percent of the South Carolina total. While the Yadkin acreage of harvested cropland was 42 percent of the total Study Area, it was only 22 percent of the North Carolina total.

Table 20. Farm Numbers, Land in Farms and Average Size of Farms, Yadkin Study Area and North Carolina, 1969 and 1974.

Area	1969			1974		
	Farms Number	Land in Farms Thou. Ac.	Average Size of Farm Acres	Farms Number	Land in Farms Thou. Ac.	Average Size of Farm Acres
Yadkin Main Stem Subarea	21075	2096	99	16596	1814	109
Lumber Subarea	6661	687	103	5272	635	120
Study Area	27736	2783	100	21868	2449	112
North Carolina	119386	12734	107	91280	11244	123
Study Area as a percent of North Carolina	23.2	21.9	93.5	24.0	21.8	91.1

Source: 24, 25

Table 21. Farm Numbers, Land in Farms and Average Size of Farms, Pee Dee Study Area and South Carolina, 1969 and 1974.

Area	1969			1974		
	Farms	Land in Farms	Average Size of Farm	Farms	Land in Farms	Average Size of Farm
	<u>Number</u>	<u>Thou. Ac.</u>	<u>Acres</u>	<u>Number</u>	<u>Thou. Ac.</u>	<u>Acres</u>
Region 6	3248	705	217	2557	609	238
Region 7	6968	1166	167	5162	1072	208
Region 8	5212	578	111	4340	529	122
Study Area	15428	2449	159	12059	2210	189
South Carolina	39559	6992	177	31948	6269	196
Study Area as a percent of South Carolina	39.0	35.0	90	37.7	35.3	97

Source: 24, 25

Table 22. Percentage of Farms in Each Economic Class, Based on Gross Farm Sales, 1969 and 1974, Yadkin Study Area and North Carolina.

Area	Class I \$40,000 and Over		Class II \$20,000 to \$39,999		Class III \$10,000 to \$19,999		Class IV \$5,000 to \$9,999		Class V \$2,500 to \$4,999		Class VI Less Than \$2,500	
	1969	1974	1969	1974	1969	1974	1969	1974	1969	1974	1969	1974
Yadkin Main Stem Subarea	5.7	11.3	5.4	7.5	6.3	12.1	12.7	15.4	15.6	13.2	54.3	40.5
Lumber Subarea	3.2	13.5	7.9	15.1	15.1	20.1	21.7	18.3	18.1	12.6	34.0	20.4
Total Study Area	5.1	11.8	6.0	9.4	8.4	14.0	14.9	16.1	16.2	13.0	49.4	35.7
North Carolina	5.0	14.4	7.4	11.4	11.4	14.4	15.7	15.2	14.8	12.5	45.8	32.0

Source: 24, 25

Table 23. Percentage of Farms in Each Economic Class, Based on Gross Farm Sales, 1969 and 1974, Pee Dee Study Area and South Carolina.

Area	Class I \$40,000 and Over		Class II \$20,000 to \$39,000		Class III \$10,000 to \$19,999		Class IV \$5,000 to \$9,999		Class V \$2,500 to \$4,999		Class VI Less Than \$2,500	
	1969	1974	1969	1974	1969	1974	1969	1974	1969	1974	1969	1974
Region 6	6.5	15.0	5.9	8.2	8.1	8.4	11.0	11.7	14.7	13.3	53.8	43.5
Region 7	6.0	16.9	8.5	12.6	13.6	15.8	19.2	15.0	18.1	13.6	34.6	26.1
Region 8	2.8	12.0	7.6	14.9	14.5	15.1	18.5	14.4	17.2	12.3	39.4	31.4
Total Study Area	5.0	14.7	7.6	12.5	12.8	14.0	17.2	14.1	17.0	13.0	40.4	31.7
South Carolina	4.8	10.7	5.4	7.9	8.2	9.7	11.6	11.4	14.1	12.8	56.0	47.6

Source: 24, 25

Table 24. Acres of Major Crops Harvested for Selected Years, Yadkin Study Area and North Carolina.

Crop	1969				State	Study Area Share Percent
	Yadkin Main Stem Subarea	Lumber Subarea	Study Area			
	-----Thousands-----					
Soybeans	45	61	106	741	14	
Corn	91	104	196	1267	15	
Cotton	12	35	47	163	29	
Wheat	47	4	51	180	28	
Hay	97	7	104	305	34	
Tobacco	31	32	63	372	17	
Vegetables	3	3	6	46	12	
Totals	326	246	573	3074	19	
Soybeans	107	117	224	1209	19	
Corn	108	92	202	1027	20	
Cotton	6	45	52	144	36	
Wheat	62	4	66	248	27	
Hay	110	7	117	332	35	
Tobacco	31	32	62	367	17	
Vegetables	2	2	4	41	11	
Totals	426	299	727	3368	22	

1974

Source: 24, 25

Table 25. Acres of Major Crops Harvested for Selected Years, Pee Dee Study Area and South Carolina.

Crop	1969					Study Area Share Percent
	Region 6	Region 7	Region 8	Study Area	State	
	-----Thousands-----					
Soybeans	145	225	63	433	852	51
Corn	55	77	66	198	387	51
Cotton	73	86	10	169	300	56
Wheat	11	7	1	19	65	29
Oats	11	7	2	20	68	29
Hay	7	12	4	23	151	15
Tobacco	8	33	26	67	69	97
Vegetables	1	6	1	8	46	17
Totals	311	453	173	937	1938	48
	1974					
Soybeans	162	275	77	514	1029	50
Corn	53	66	70	189	428	44
Cotton	72	89	3	164	252	65
Wheat	20	17	3	40	98	41
Oats	10	7	2	19	77	25
Hay	8	12	4	24	156	15
Tobacco	7	33	25	65	66	98
Vegetables	.3	3	.6	3.9	27	14
Totals	332.3	502	184.6	1018.9	2133	48

Source: 24, 25

Tables 26 and 27 show the production of major crops for the Yadkin and Pee Dee Study Areas. As a percent of state production, the Pee Dee Study Area is very important for the production of tobacco, soybeans, corn, cotton and wheat. The Yadkin Study Area is primarily important at the state level in the production of cotton and hay.

A comparison of the relative importance of each study area to the entire Economic Study Area in Table 28 shows the Pee Dee Study Area produces the majority of most crops while the Yadkin Study Area is especially important in the production of livestock and livestock products. In total value for all farm products, the Yadkin Study Area produces 59 percent of the total for the Yadkin - Pee Dee Study Area.

The number of livestock was larger in 1974 in the Yadkin Study Area than the Pee Dee Study Area, especially the number of cattle and calves and broilers. Tables 29 and 30 also show the relative importance of subareas in livestock numbers. In the Yadkin Study Area, the Lumber Subarea is far behind the Yadkin Main Stem Subarea in cattle and calves and broilers, but about equal in hogs and pigs. In the Pee Dee Study Area, Region 8 is behind the other regions in cattle and calf numbers but ahead in swine numbers.

Differences between subareas in amount of cropland harvested and numbers of livestock come through clearly in Tables 31 and 32 which present the value of farm products by subarea. Although the three county Lumber Subarea is considerably smaller in size than the Yadkin Main Stem Subarea, its value of crop products is slightly greater. This is due to the relatively high value of the crops it produces: tobacco, cotton, soybeans, and corn.

In the Pee Dee Study Area, Region 8 has the least cropland harvested, but the high value of its tobacco put it equal with Region 6 in total value of all farm products. Region 7 is the most important agricultural region in the study area with over 500,000 acres of harvested cropland in 1974.

Table 26. Production of Major Crops for Selected Years, Yadkin Study Area and North Carolina.

Crop	Unit	1969					Study Area Share Percent
		Yadkin Main Stem Subarea	Lumber Subarea	Study Area	State		
		-----Thousands-----					
Soybeans	bu.	1009	1454	2463	18706	13	
Corn	bu.	5182	6963	12316	96893	13	
Cotton	bales	9	26	35	115	31	
Wheat	bu.	1802	148	1950	7327	27	
Hay	tons	149	19	168	472	36	
Tobacco	lbs.	53793	60047	113840	674932	17	
Crop	Unit	1974					Study Area Share Percent
		Yadkin Main Stem Subarea	Lumber Subarea	Study Area	State		
		-----Thousands-----					
Soybeans	bu.	2182	2545	4728	26751	18	
Corn	bu.	7349	7183	14647	72819	20	
Cotton	bales	5	44	49	132	37	
Wheat	bu.	2127	133	2260	8667	26	
Hay	tons	190	17	207	562	37	
Tobacco	lbs.	55745	64074	119819	714136	17	

Source: 24, 25

Table 27. Production of Major Crops for Selected Years, Pee Dee Study Area and South Carolina.

Crop	Unit	1969				State	Study Area Share
		Region 6	Region 7	Region 8	Study Area		
		-----Thousands-----					Percent
Soybeans	bu.	3025	5067	1464	9556	18613	51
Corn	bu.	2630	3919	3944	10493	19172	55
Cotton	bales	52	70	6	128	236	54
Wheat	bu.	206	277	40	523	2165	24
Oats	bu.	496	501	98	1095	3196	34
Hay	tons	17	27	6	50	293	17
Tobacco	lbs.	11859	61997	53108	126964	129169	98
		1974					
Soybeans	bu.	3164	5282	1646	10092	20409	49
Corn	bu.	2122	4452	4766	11340	26653	43
Cotton	bales	74	47	2	123	261	47
Wheat	bu.	511	453	64	1028	2600	40
Oats	bu.	482	264	39	785	3234	24
Hay	tons	19	25	6	50	307	16
Tobacco	lbs.	11798	66582	53553	131933	136338	97

Source: 24, 25

Table 28. Percentage of Yadkin - Pee Dee Economic Study Area Crop Production, Livestock Numbers and Value of Farm Products, by Study Area, 1974.

	Yadkin Study Area	Pee Dee Study Area
Soybeans	32	68
Corn	56	44
Cotton	28	72
Wheat	69	31
Hay	81	19
Tobacco	48	52
Value of All Crops	44	56
Cattle and Calves	78	22
Hogs and Pigs	60	40
Value of Livestock and Livestock Products	83	17
Total Value of Crops, Livestock and Livestock Products	59	41

Source: 24, 25

Table 29. Livestock on Farms in Selected Years, Yadkin Study Area and North Carolina.

Area	1969			
	Cattle & Calves	Hogs & Pigs	Sheep & Lambs	Broilers
-----thousands-----				
Yadkin Main Stem Subarea	241	113	3	20687
Lumber Subarea	20	103	-	93
Study Area	262	216	3	20779
North Carolina	859	1393	17	53884
Percent in Study Area	31	16	18	39

1974				
Yadkin Main Stem Subarea	285	91	2	17409
Lumber Subarea	20	100	-	51
Study Area	305	191	2	17460
North Carolina	1022	1415	10	45055
Percent in Study Area	30	14	20	39

Source: 24, 25

Table 30. Livestock on Farms in Selected Years, Pee Dee Study Area and South Carolina.

Area	1969				Broilers
	Cattle & Calves	Hogs & Pigs	Sheep & Lambs		
	-----thousands-----				
Region 6	30	50	0.1		
Region 7	39	62	0.0		
Region 8	15	80	0.0		
Study Area	84	192	0.1		
South Carolina	516	414	1.6		4186
Percent in Study Area	16	46	6.0		
	<u>1974</u>				
Region 6	30	30	0.0		
Region 7	42	43	0.0		
Region 8	16	55	0.0		
Study Area	88	128	0.0		
South Carolina	586	334	1.0		
Percent in Study Area	15	38	0.0		

Source: 24, 25

Table 31. Farm Products Sold in Selected Years, Yadkin Study Area and North Carolina.

Area	Crop	Livestock & Livestock Products	Total	Farm Production Expenses
-----Million Dollars-----				
<u>1969</u>				
Yadkin Main Stem Subarea	51.5	155.0	206.5	159.2
Lumber Subarea	53.1	12.0	65.1	46.9
Study Area	104.6	167.0	271.6	206.1
North Carolina	669.3	513.7	1183.0	893.2
% in Study Area	16	33	23	23
<u>1974</u>				
Yadkin Main Stem Subarea	101.5	225.0	326.5	258.6
Lumber Subarea	105.8	19.7	125.4	79.0
Study Area	207.3	244.6	451.9	337.6
North Carolina	1330.6	804.4	2105.0	1452.7
% in Study Area	16	30	21	23

Source: 24, 25

Table 32. Farm Products Sold in Selected Years, Pee Dee Study Area and South Carolina.

Area	Crop	Livestock & Livestock Products	Total	Farm Production Expenses
-----Million Dollars-----				
<u>1969</u>				
Region 6	25.0	13.9	38.9	39.1
Region 7	65.5	17.3	82.8	67.5
Region 8	42.3	6.4	48.7	34.4
Study Area	132.8	37.6	170.4	141.0
South Carolina	205.0	150.3	355.3	319.9
% in Study Area	65	25	48	44
<u>1974</u>				
Region 6	61.6	18.7	80.3	62.2
Region 7	132.9	23.0	155.9	109.5
Region 8	72.1	8.5	80.6	50.4
Study Area	266.6	50.2	316.8	222.1
South Carolina	436.3	198.7	635.0	490.6
% in Study Area	61	25	50	45

Source: 24, 25

The value of all its farm products was almost twice that of each of the other regions.

The value of farm land and buildings has increased by 52.3 percent in the Yadkin - Pee Dee Economic Study Area between 1969 and 1974. Since the total land in farms declined during that period of time, the increase is due primarily to inflation and the rising value of land. The value of machinery in the Economic Study Area increased by 68.6 percent in the same period. Equipment prices increased less than 5 percent during the period so it can be speculated that most of the 68.6 percent increase was due to purchases of new equipment. Farm incomes were at all time highs in the early 70's so a large jump in equipment purchases is reasonable. Tables 33 and 34 present the value of farm land, buildings and equipment for each of the subareas. The value of land and buildings increased from 1969 - 1974 much less in the Pee Dee Study Area (45.7 percent) than in South Carolina (63.0 percent). The increase in value of machinery was about the same. In the Yadkin Study Area, the increase in the value of land was the same in the study area and North Carolina, but the increase in the value of machinery and equipment was lower in the study area (70.5 percent) than in the state (90 percent).

Irrigation has not been a widespread practice in the Yadkin - Pee Dee Study Area where only 2.5 percent of all farms used irrigation in 1974. When irrigation has been used it has been on high value crops such as tobacco and vegetable crops. Tables 35 and 36 show irrigation data for subareas in 1969 and 1974. Under normal conditions there is adequate rainfall in the Yadkin - Pee Dee Study Area which explains the limited use of irrigation. Expansion in the use of irrigation has historically followed drought years, but declined again when rainfall returned to normal. It appears that irrigation will continue to have only limited application in the Yadkin - Pee Dee Study Area.

Table 33. Value of Farm Land, Buildings, and Equipment, Yadkin Study Area and North Carolina, 1969 and 1974.

Area	1969			1974		
	Land and Buildings	Machinery and Equipment	Total Value	Land and Buildings	Machinery and Equipment	Total Value
-----Million Dollars-----						
Yadkin Main Stem Subarea	696.3	112.9	809.2	1102.0	183.1	1285.2
Lumber Subarea	230.3	37.2	267.5	358.3	72.7	431.1
Study Area	926.6	150.1	1076.6	1460.4	255.9	1716.2
North Carolina	4244.4	624.0	4868.4	6633.5	1185.8	7819.3

Source: 24, 25

Table 34. Value of Farm Land, Buildings, and Equipment, Pee Dee Study Area and South Carolina, 1969 and 1974.

Area	1969		1974	
	Land and Buildings	Machinery and Equipment	Land and Buildings	Machinery and Equipment
	-----Million Dollars-----			
Region 6	188.0	30.0	273.5	47.9
Region 7	352.8	53.7	516.5	87.3
Region 8	201.6	31.6	291.9	56.3
Study Area	742.4	115.3	1081.9	191.5
South Carolina	1826.5	261.7	2977.7	452.2
				321.4
				603.8
				348.2
				1273.4
				3429.9

Source: 24, 25

Table 35. Irrigation, Number of Farms and Acreage Irrigated, Yadkin Study Area and North Carolina, 1969 and 1974.

	Yadkin Main Stem Subarea	Lumber Subarea	Study Area	North Carolina
<u>1969</u>				
Total Number of Farms	21,075	6,661	27,736	119,386
Number of Farms Irrigated	553	222	775	5,170
Percent of Farms Irrigated	2.6	3.3	2.8	4.3
Acres Irrigated	4,649	2,171	6,820	59,153
Acres Irrigated per Farm	8.4	9.8	8.8	11.4
<u>1974</u>				
Total Number of Farms	16,596	5,272	21,868	91,280
Number of Farms Irrigated	497	111	608	4,002
Percent of Farms Irrigated	3.0	2.1	2.8	4.4
Acres Irrigated	4,617	1,367	5,984	51,340
Acres Irrigated per Farm	9.3	12.3	9.8	12.8

Source: 24, 25

Table 36. Irrigation, Number of Farms and Acreage Irrigated, Pee Dee Study Area and South Carolina, 1969 and 1974.

	Region 6	Region 7	Region 8	Study Area	South Carolina
<u>1969</u>					
Total Number of Farms	3,248	6,968	5,212	15,428	39,559
Number of Farms Irrigated	43	206	192	441	675
Percent of Farms Irrigated	1.3	3.0	3.7	2.9	1.7
Acres Irrigated	496	3,187	2,518	6,201	15,003
Acres Irrigated per Farm	11.5	15.5	13.1	14.1	22.2
<u>1974</u>					
Total Number of Farms	2,557	5,162	4,340	12,059	31,948
Number of Farms Irrigated	20	117	92	229	455
Percent of Farms Irrigated	0.8	2.3	2.1	1.9	1.4
Acres Irrigated	577	2,538	1,013	4,128	10,330
Acres Irrigated per Farm	28.9	21.7	11.0	18.0	22.7

Source: 24, 25

Summary

In the Yadkin - Pee Dee Economic Study Area in 1974, 1,745,900 acres of cropland were used for crop production with a value of \$473.9 million. The value of livestock and livestock products from the area was \$294.8 million. Total value for all agricultural products in the Study Area was \$768.7 million.

Similar to national trends, the number of farms in the area declined from 43,164 to 33,927 while the average size increased slightly from 121 acres to 137 acres between 1969 and 1974. The Pee Dee Study Area had 58 percent of the cropland used in 1974 and produced 56 percent of the value of all crops. The Yadkin Study Area was more important in livestock production with 83 percent of the value of livestock for the Yadkin - Pee Dee Study Area. Irrigation was used on only 2.5 percent of the farms in 1974 and was not an important practice in the Study Area.

FORESTRY CHARACTERISTICS

Importance of Forest Resources

One of the Study Area's major natural resources, timber, covers 61 percent of its total land area. The Yadkin Study Area has 3.7 million acres in forest land (55 percent of its land base); forest land in the Pee Dee Study Area represents 69 percent of its land base, or 3.4 million acres of timber.

When colonists first claimed land along the Atlantic seaboard, forest vegetation covered over 90 percent of the colonial lands. Settlers had the arduous task of clearing timber to create cropland. Felled trees provided material for shelter construction, furniture, and fuel.

The economic impact of the Yadkin - Pee Dee Study Area's forest resource is reflected in the variety of uses now made of the resource -- from production of wood fiber to the support of a recreational environment ideal for camping, hunting and fishing. This section, however, will deal only with the value derived from harvesting, manufacture, and remanufacture of wood products.

Volume and Value of Stumpage

Annual timber removal in the Economic Study Area produces 269.6 million cubic feet of wood fiber (Table 37). Of the removed volume, 21 percent is lost in land clearing and in logging waste. The final volume of 213.5 million cubic feet is converted into forest products as shown in Figure 21. This volume had a stumpage value of \$90,507,992 in 1977. Softwood logs make up 78 percent of the volume cut and in 1977 represented 65 percent of the stumpage value of all timber sold.

Employment and Earnings

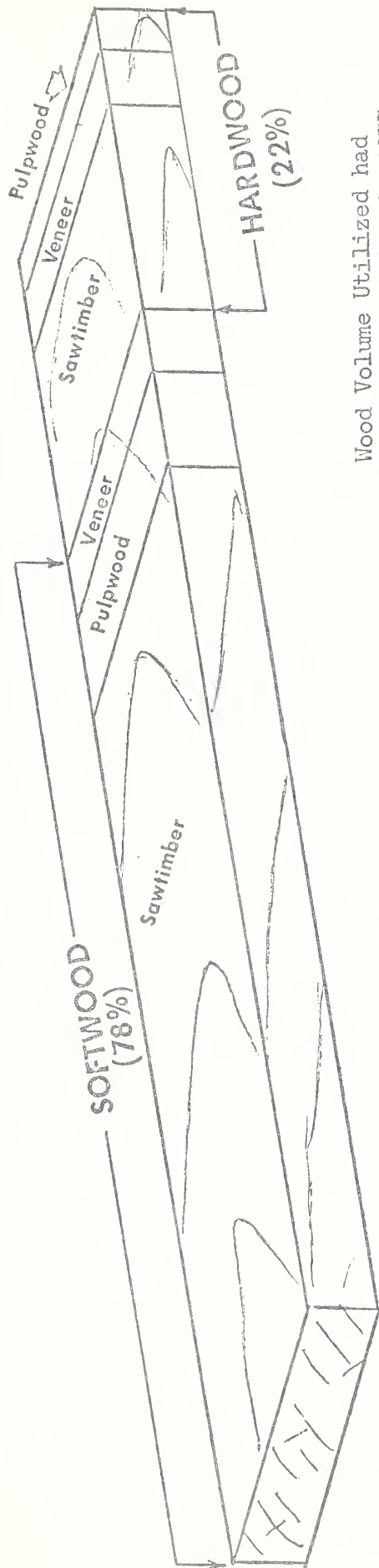
The employment and earnings attributable to the Economic Study Area's timber resource are related to three industrial activities: managing timber

Table 37. Roundwood Products Output, Yadkin - Pee Dee Economic Study Area, 1974.

Item	All Species	Softwood	Hardwood
	-----thousand cubic feet-----		
Roundwood Products			
Sawlogs	117,137	77,014	40,123
Pulpwood	78,943	52,914	26,029
Veneer logs	13,258	5,281	7,977
Other	4,154	3,960	194
All Products	213,492	139,169	74,323
Logging Residue and Other Removals	56,169	20,439	35,730
Total Removals	269,661	159,608	110,053
Products as % of Removals	79	87	68

Source: 2, 7

Figure 21



Wood Volume Utilized had
a stumpage value in 1977
of \$90,507,992

Wood Volume Utilized

BY PRODUCT and SPECIES

Yadkin - Pee Dee Economic Study Area

1974

Graphic prepared by
Doraville Field Office
U. S. Forest Service

tracts, logging timber, and the manufacture/remanufacture of wood products. Figure 22 shows the study area location of primary wood-using industries, those which manufacture logs into lumber, plywood, veneer, paper and other primary products. In addition, there are other forest products industries engaged in the remanufacture of primary products into finished products such as toys, furniture and cardboard boxes.

Employment in paper products has been growing steadily in the Economic Study Area since 1950, exceeding the average growth rate for all manufacturing employment. Employment in logging, lumber, wood products and furniture has also been growing steadily, although more slowly than average manufacturing employment. In 1972, forest industries employed 53,300 people and paid over \$359 million in payrolls, representing 19 percent of the total manufacturing employment and payrolls in the Study Area.

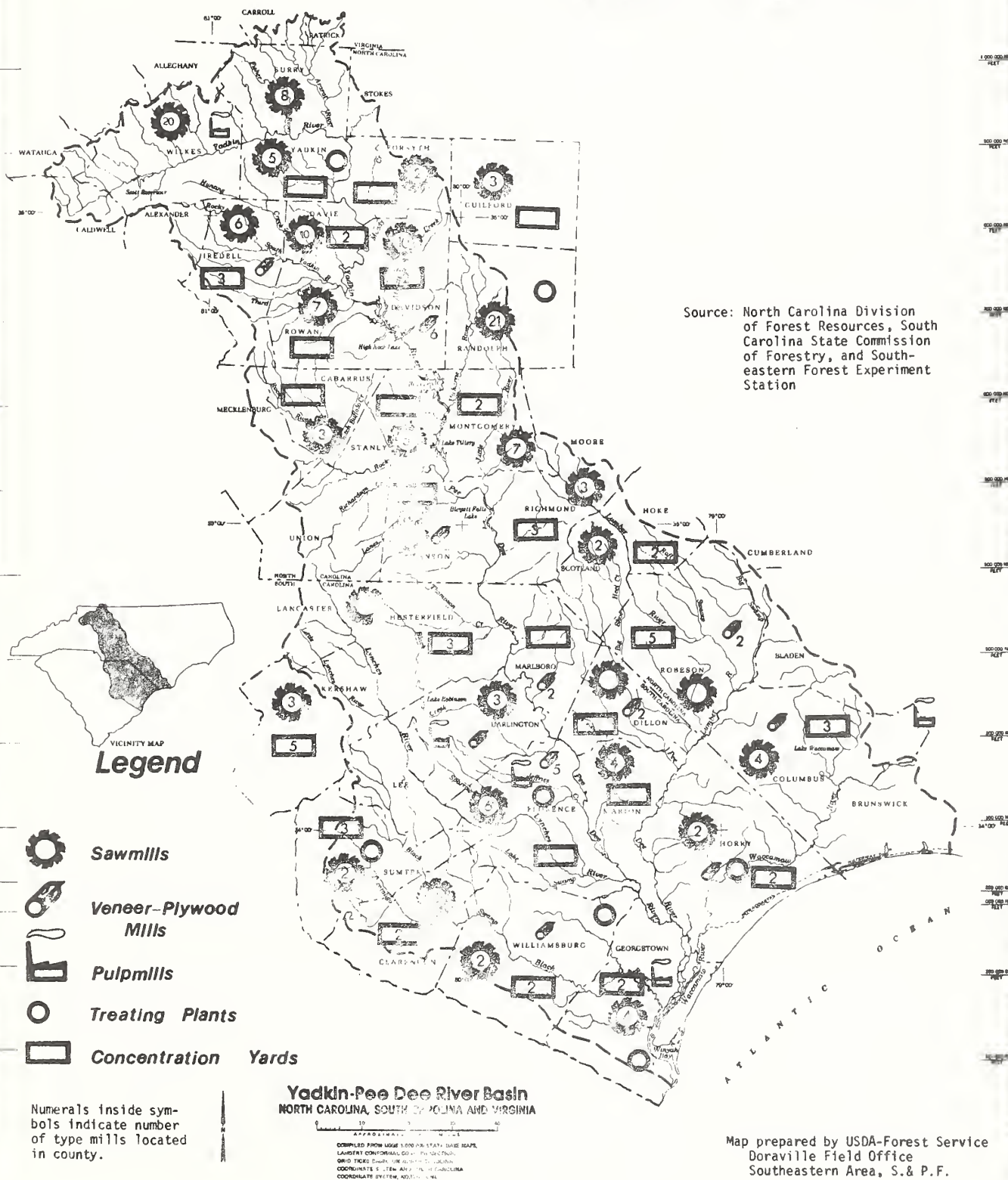
The forest products industry, especially furniture, is more important to the Economic Study Area economy than the industry is nationally. The furniture industry represents 10 percent of the local manufacturing employment, while nationally the industry employs only 2 percent of all manufacturing employees.

Value Added and Capital Expenditures

Value added by industry is the difference between the value of the raw materials used and the value of the products produced. The forest products industries in the Economic Study Area contribute almost \$699 million in value added to the local economy. Capital expenditures and value added per employee are somewhat low, however, compared to the national average for forest product industries. Only the furniture industry has a better than average investment in capital equipment.

Figure 22

Forest Industries



Brief Description of Commercial Forest Lands

The Yadkin - Pee Dee Economic Study Area has 7,144,630 acres of forest land divided into 7 groups or forest types. The distribution of these forest types is typical of the Coastal Plain and Piedmont physiographic regions. Hardwood timber accounts for 64 percent of commercial forest lands and pine 36 percent. Distribution within the state subareas occurs in somewhat the same pattern. For the Yadkin Study Area, hardwood represents 65 percent of the timber stands; pine, 35 percent. In the Pee Dee Study Area, hardwood types also predominate--63 percent; pine types, 37 percent. Table 38 gives the acreage in each forest type.

The character of forest land ownership in the Economic Study Area is predominately private with less than 4 percent under public management, either state or federal. Although farm ownership of timber lands has been on the decline for the past 30 years, it still represents the single largest ownership group.

	<u>OWNERSHIP GROUPS</u> (commercial forest land)	
	<u>Yadkin Study Area</u>	<u>Pee Dee Study Area</u>
	-----percent-----	
Public	3	4
Forest Industry	8	23
Farmer	46	55
Other Private	43	18

Source: 2, 7

Present management practices do not get the highest yields possible from the Study Area's timber stands. The current net annual growth in the Yadkin Study Area is 61.5 cubic feet per acre. Both study areas have the capacity to grow an average of 90 cubic feet per acre per year.

Table 38. Forest Types in Yadkin - Pee Dee Economic Study Area.

Type	Yadkin Study Area	Pee Dee Study Area
	-----acres-----	
Hardwoods		
Oak-hickory	1,538,185	729,200
Oak-gum-cypress	301,270	779,812
Oak-pine	474,473	605,027
Other	88,722	81,728
Total	2,402,650	2,195,767
Pines		
Loblolly-shortleaf	1,167,663	932,027
Longleaf-slash	82,692	338,821
Other	25,010	--
Total	1,275,365	1,270,848
Grand Total	3,678,015	3,466,615

Source: 2, 7

Table 39. Net Annual Growth and Annual Timber Removal, Yadkin - Pee Dee Economic Study Area.

	Yadkin Study Area	Pee Dee Study Area
	-----million cubic feet-----	
Net Annual Growth	226.2	198.8
Annual Timber Removal	136.8	132.8

Source: 2, 7

Pine timber in the Economic Study Area at large represents 42 percent of the growing stock volume; 58 percent is in hardwood volume. A breakdown of this volume within each study area reveals the following distribution:

	<u>GROWING STOCK VOLUME</u> (by species)	
	<u>Yadkin Study Area</u> -----million cubic feet-----	<u>Pee Dee Study Area</u> -----million cubic feet-----
Pine Growing Stock	1,879.2	1,810.6
Hardwood Growing Stock	2,634.3	2,109.4
Total	4,513.5	3,920.0

Source: 2, 7

Timber in the Economic Study Area is removed at an annual rate of 269.6 million cubic feet. The Pee Dee Study Area provides 51 percent of this volume; the Yadkin Study Area the remaining 49 percent.

A comparison of the volumes of net annual growth and of timber removal in Table 39 points to a significant volume of wood fiber available for expanding requirements. Currently only 62 percent of the Economic Study Area's net annual growth is removed. Harvest volumes in the Yadkin Study Area account for 60 percent of net annual growth; in the Pee Dee Study Area it is 66 percent.

Not all of the cut timber is converted into products. Forest Survey data indicate that a significant portion of removed wood fiber is not utilized for products. In the Yadkin Study Area, only 77 percent is converted into forest products; the recovery rate in the Pee Dee Study Area is 81 percent. Logging residues and trees destroyed in land clearing account for most of the losses in both study areas.

Use of Forest Lands for Forage

Grazing of forest lands in the Economic Study Area was a common practice for many years. Changes in economic conditions in recent decades and the advent of improved grasses, however, encouraged the livestock producer to rely on improved pasture. Now only scattered timber tracts are grazed, principally because fencing is not used to separate timber lands from improved pastures.

Forage, properly managed, can be utilized to support livestock production. In the Economic Study Area there are 2.5 million acres of pine types, selected areas of which could support grazing. Between 800,000 and 1,000,000 acres of the pine stands could be used along with improved pasture. According to the Georgia Agricultural Experiment Station (5), a weight gain of 185 pounds per animal unit could be achieved during an 8-month grazing season, using 24 acres per animal unit. Pine stands in the Study Area can provide sufficient forage to support a beef production level of 6.2 million pounds annually, evenly divided between the study areas.

Problems and Opportunities

All states along the South Atlantic Coast have a large percentage of their respective land areas in commercial timber stands. Georgia has the highest percentage--67--but the states of North Carolina and South Carolina are not far behind, each with 64 percent of their land areas in forest land. In each of the state subareas, however, forests account for 55 percent of the land area in North Carolina and 69 percent in South Carolina. Whether state-wide, or by subareas, each state has sufficient land in commercial timber to justify the creation of new programs or the continuation of existing programs in the protection and development of their respective forest resources.

Major efforts are needed to improve the production efficiency of forest land. Reforestation should be carried out on 1.1 million acres of forest land now classed as non-stocked or poorly-stocked in order to more fully utilize the lands' growth capacity. Genetically-improved forest tree seedlings should be used in the reforestation program to realize a 10 percent increase in normal wood fiber volume. Reforestation would involve 489,000 acres in North Carolina and 611,000 in South Carolina.

Losses in timber volume occur following wildfires and insect and disease attacks. These losses are estimated to be 3 to 5 percent of normal volume growth. Additional losses in the Study Area occur during timber harvesting; some related to careless logging and some to current utilization practices.

Some improvements in forest management must wait for more favorable economic conditions before they are fully implemented. Fertilization is a practice that technology indicates will increase wood fiber volume by 10 to 15 percent over normal growth rates. Additional research should provide information on soils that will benefit from application of fertilizers and on the types and amounts that can be applied economically.

Allowance in management efforts should be made for other uses of forest land. Many recreational programs depend upon a forest environment for fulfillment. Timberlands in the Study Area are as important to the social and psychological welfare of the Study Area population as they are to the forest economy.

County level data on forest acreage and forest types are presented in the Appendix beginning with Table A-29.

GENERAL ECONOMY PROJECTIONS

General Economy Assumptions and Projections

Population, employment, income and forestry projections used the OBERS Series E' projections (27) as a guide in their formation. The OBERS framework assumes no major wars or serious depressions will disrupt the economy. It does not, however, preclude cyclical variations in economic activity. Generally favorable economic conditions and a continuing upward trend in population are assumed. It is important to note that these projections were made prior to the energy crisis of the mid 1970's and may be considered by some as rather optimistic in terms of projected economic activity.

Population projections were also based on state and county level projections made in 1972 by the U.S. Environmental Protection Agency (29) in cooperation with individual state Social Service Advisory Committees. In addition, projections made by state and regional agencies were used. Although a number of sources were consulted, the final population projections that appear in Table 40 and in Appendix Tables A-25 to A-28 were made by the USDA planning staff. They are presented here, as are all projections, as one estimate of what future conditions will be in the years 2000 and 2020.

These projections show a 42.7 percent increase in population between 1970 and 2000 and a 64.5 percent increase between 1970 and 2020 in the Yadkin - Pee Dee Economic Study Area. The Yadkin Study Area and Pee Dee Study Area are expected to experience similar growth rates. Within the Yadkin Study Area the rate of growth is projected to be higher in the Yadkin Main Stem Subarea than in the Lumber Subarea. Region 8 is expected to have an 84 percent growth between 1970 and 2000 and a 101 percent growth between 1970 and 2020. This is the most rapid growth rate of any of the subareas

Table 40. Historical and Projected Population - Yadkin - Pee Dee Economic Study Area, 1970, 2000, and 2020.

Region	1970	2000	2020
Yadkin Main Stem Subarea	1,181,600	1,684,400	1,977,100
Lumber Subarea	158,700	210,600	235,600
<hr/>			
Yadkin Study Area	1,340,300	1,895,000	2,212,700
<hr/>			
Region 6	158,100	206,800	235,000
Region 7	263,000	355,000	400,000
Region 8	137,700	253,000	277,000
<hr/>			
Pee Dee Study Area	558,800	814,800	912,000
<hr/>			
Yadkin - Pee Dee Economic Study Area	1,899,100	2,709,800	3,124,700

Source: 18

and is projected due to rapid growth in Horry County of tourism, retirement communities, and second homes as well as industrial growth due to availability of land and amenities that would favor such growth. Since the growth is from a small base, the absolute growth is not as great as is implied from the percentage figures.

Projections of total employment in Table 41 are tied to population projections and percentage increases in employment are similar to those for population. The proportion of the population in the work force in the Yadkin - Pee Dee Study Area is expected to increase from the 1970 level of 38.9 percent to 41.9 percent in 2000 and 42.0 percent in 2020. The 2020 proportion is projected to be considerably higher in the Yadkin Study Area with 43.5 percent compared to 38.4 percent in the Pee Dee Study Area. These projections reflect the present state of higher industrialization and urbanization in the Yadkin Study Area.

The projections for per capita income in Table 42 are presented in constant dollar terms which means that any increases due to inflation have been taken out. The OBERS projections were made during a period of growth in the late 1960's and early 1970's before the recession and energy problems of the mid 1970's. The revisions made by the USDA staff decrease the OBERS projections considerably but still show significant increases over the 1970 to 2020 time period. Factors which were considered to influence future per capita incomes were a general increase in the standard of living of all persons as a result of real growth in output of the Study Area's economy, and the increase in the proportion of the population that will be working. It is thought that an increase in the urban proportion of the population over time, as well as continuing industrialization in some of the more rural areas, will also tend to have an increasing effect on per capita income.

Table 41. Historical and Projected Total Employment - Yadkin Pee Dee Economic Study Area, 1970, 2000, and 2020.

Area	1970	2000	2020
Yadkin Main Stem Subarea	492,900	758,000	869,900
Lumber Subarea	55,500	80,000	91,900
Yadkin Study Area	548,400	838,000	961,800
Region 6	50,300	72,400	84,600
Region 7	95,300	134,900	160,000
Region 8	44,700	91,000	105,300
Pee Dee Study Area	190,300	298,300	349,900
Yadkin - Pee Dee Economic Study Area	738,700	1,136,300	1,311,700

Source: 18,27

Table 42. Present and Projected Per Capita Income, Yadkin - Pee Dee Economic Study Area, North Carolina and South Carolina and United States, 1970, 2000, and 2020.

Area	1970	2000		2020	
		OBERS	USDA ¹	OBERS	USDA ¹
-----1967 \$-----					
Yadkin Main Stem Subarea	2,442	7,300	5,000	12,100	7,000
Lumber Subarea	1,544	5,300	3,600	9,200	5,400
Yadkin Study Area	2,336	7,100	4,800	11,800	6,900
Region 6	1,701	5,600	3,900	9,900	5,900
Region 7	1,764	5,800	4,000	10,200	6,100
Region 8	1,598	5,400	3,700	9,500	5,700
Pee Dee Study Area	1,706	5,600	3,900	9,900	5,900
Yadkin - Pee Dee Economic Study Area	2,111	6,600	4,600	11,200	6,700
North Carolina	2,172	6,900	4,700	11,500	6,700
South Carolina	2,022	6,500	4,500	11,000	6,600
United States	2,738	8,100	5,600	13,200	7,800

¹Working data prepared by USDA planning staff.

Source: 19 and derived from 27.

AGRICULTURAL PROJECTIONS

Agricultural Projections

Projections of the agricultural sector were made on the basis of hydrologic boundaries rather than the county boundaries of the Economic Base Study Area (See Figure 1). This was done because input data for land resources was available on a hydrologic basis.

In making projections of the agricultural sector, it is assumed that historical trends will continue. Land treatment programs such as soil and water conservation district programs with technical assistance will remain at their present levels, technology will result in higher per acre yields and farmers will have freedom to choose their farming enterprises.

Even though technology will result in higher yields through improved varieties and chemicals and tillage practices, yields on some soils will be reduced over time as drainage systems deteriorate and erosion removes the productive soil layer. As more acres are brought into production, average yields per acre may be lower if increased production comes from marginal land.

Projections were developed with the aid of linear programming models of agricultural sectors of North and South Carolina. Inputs for both models were supplied by USDA soil scientists, agronomists and economists from each state. Tables 43 and 44 give the crops and yield levels that were incorporated into the state agricultural models. Differences in crop yields between states are due primarily to varying climate and land resource conditions in the two states.

The planning staff determined that the most likely level of future agricultural production in North Carolina and the Yadkin Basin would correspond to the OBERS E' High Export level presented in Tables 46 and 47. The base year conditions are given in Table 45. OBERS E' High Export Projections (27) are a set of nationally consistent agricultural projections which reflect recent high levels of agricultural exports.

Table 43. Present and Projected Average Crop Yields and Percent Change, Yadkin Basin, 1970, 2000 and 2020.

	Base Year 1970	Yield 2000	% Change 1970-2000	Yield 2020	% Change 1970-2020
Corn Grain (bu/ac)	59.8	91.3	53	125.5	110
Corn Silage (tons/ac)	12.4	14.7	19	17.6	42
Hay (tons/ac)	1.6	1.9	19	2.5	56
Improved Pasture (aum/ac)	1.6	1.9	19	2.2	38
Unimproved Pasture (aum/ac)	1.1	1.1	0	1.2	9
Burly Tobacco (lbs/ac)	1940	2846	47	3626	87
Flue Cured Tobacco (lbs/ac)	1628	2122	30	2460	51
Cotton (lbs/ac)	308	392	27	537	74
Barley (bu/ac)	40.5	48.9	21	63.5	57
Oats (bu/ac)	51.2	66.1	29	79.9	56
Sorghum (bu/ac)	51.1	66.7	31	76.7	50
Soybeans (bu/ac)	20.0	27.6	38	33.0	65
Sweet Potatoes (cwt/ac)	147	206	40	284	93
Wheat (bu/ac)	34.9	43.9	26	57.2	64
Peanuts (lbs/ac)	2110	3018	43	3741	77

Table 44. Present and Projected Average Crop Yields and Percent Change, Pee Dee Basin, 1974, 2000 and 2020.

	Base Year 1974	Yield 2000	% Change 1974-2000	Yield 2020	% Change 1974-2020
Cotton (lbs/ac)	360	576	60	634	76
Corn (bu/ac)	60	79.9	33	89.2	49
Wheat (bu/ac)	25.7	52.3	104	62.1	142
Oats (bu/ac)	41.3	49.5	20	52.9	28
Barley (bu/ac)	39.1	54.2	39	63.2	62
Hay-Pasture (tons/ac)	2.1 ^{1/}	1.8		2.5	
Soybeans (bu/ac)	19.6	36.9	88	41.4	111
Tobacco (lbs/ac)	2029	2621	29	2920	44
Peanuts (lbs/ac)	1785	3089	73	3400	90

^{1/} Hay only

Table 45. Yadkin Basin, North Carolina Agricultural Production and Acreage, 1970 Base Year.

Crop	Basin		State		Basin Portion of State Level	
	Production	Acreage	Production	Acreage	Production	Acreage
	-----Thousands-----		-----		-----Percent-----	
Corn Grain (bu.)	17,289	284	87,116	1,381	19.9	20.6
Corn Silage (tons)	519	42	1,718	139	30.2	30.2
Hay (tons)	138	86	564	357	24.5	24.1
Improved Pasture (tons)	601	366	2,007	1,308	30.0	28.0
Unimproved Pasture (tons)	160	152	645	675	24.8	22.5
Burley Tobacco (lbs.)	1,940	1	17,978	8	10.8	12.5
Flue Cured Tobacco (lbs.)	146,528	90	703,884	421	20.8	21.4
Cotton (lbs.)	12,024	39	59,581	192	20.2	20.3
Barley (bu.)	1,337	33	3,111	76	43.0	43.4
Oats (bu.)	2,202	43	5,808	113	37.9	38.1
Sorghum (bu.)	1,277	25	3,567	70	35.8	35.7
Soybeans (bu.)	4,189	209	22,529	1,070	18.6	19.5
Sweet Potatoes (cwt.)	586	4	3,463	24	16.9	16.7
Wheat (bu.)	3,284	94	8,579	245	38.3	38.4
Peanuts (lbs.)	65,425	31	366,282	169	17.9	18.3
Total Cropland		1,499		6,248		24.0

Table 46. Yadkin Basin, North Carolina Agricultural Production and Acreage Projections, 2000
OBERS E' Production

Crop	Basin		State		Basin Portion of State Level	
	Production	Acreage	Production	Acreage	Production	Acreage
	-----Thousands-----		-----		-----Percent-----	
Corn Grain (bu.)	31,673	347	144,000	1,491	22.0	23.3
Corn Silage (tons)	1,236	84	3,700	253	33.4	33.2
Hay (tons)	162	84	612	320	26.5	26.3
Improved Pasture (tons)	881	458	2,710	1,511	32.5	30.3
Unimproved Pasture (tons)	51	48	204	213	25.0	22.5
Burley Tobacco (lbs.)	1,992	0.7	36,674	12	5.4	5.8
Flue Cured Tobacco (lbs.)	176,141	83	816,198	376	21.6	22.1
Cotton (lbs.)	2,744	7	13,804	33	19.9	21.2
Barley (bu.)	2,003	41	5,927	119	33.8	34.5
Oats (bu.)	2,050	31	5,828	90	35.2	34.4
Sorghum (bu.)	2,334	35	5,095	76	45.8	46.1
Soybeans (bu.)	15,860	574	87,515	2,984	18.1	19.2
Sweet Potatoes (cwt.)	412	2	2,730	14	15.1	14.3
Wheat (bu.)	2,944	67	7,683	174	38.3	38.5
Peanuts (lbs.)	126,738	42	730,221	238	17.4	17.7
Total Cropland	1,903.7		7,904		24.1	

Table 47. Yadkin Basin, North Carolina Agricultural Production and Acreage Projections, 2020.
OBERS E' Production

Crop	Basin		State		Basin Portion of State Level	
	Production	Acreage	Production	Acreage	Production	Acreage
	-----Thousands-----		-----		-----Percent-----	
Corn Grain (bu.)	36,655	292	161,722	1,238	22.7	23.6
Corn Silage (tons)	1,390	79	4,543	256	30.6	30.9
Hay (tons)	140	57	584	246	24.0	23.2
Improved Pasture (tons)	1,032	473	3,142	1,556	32.9	30.4
Unimproved Pasture (tons)	37	30	115	104	32.2	28.9
Burley Tobacco (lbs.)	2,538	0.7	47,624	13	5.3	5.4
Flue Cured Tobacco (lbs.)	189,398	77	1,010,681	403	18.7	19.1
Cotton (lbs.)	913	1.7	4,591	8	19.9	21.3
Barley (bu.)	3,363	53	7,154	112	47.0	47.3
Oats (bu.)	2,158	27	5,652	71	38.2	38.0
Sorghum (bu.)	2,379	31	5,757	76	41.3	40.8
Soybeans (bu.)	17,242	522	97,335	2,823	17.7	18.5
Sweet Potatoes (cwt.)	568	2	3,362	12	16.9	16.7
Wheat (bu.)	2,229	39	6,944	121	32.1	32.2
Peanuts (lbs.)	130,941	35	784,370	208	16.7	16.8
Total Cropland	1719.4		7,247		23.7	

In South Carolina, based on results from the agricultural model, it would not be possible to produce the OBERS E' High Export level of production with the level of land resources available unless 506,000 acres of timberland were cleared and planted in agricultural crops by the year 2020. The planning staff adjusted the OBERS E' High Export production levels at the state level as shown in Table 48. Primary changes between the OBERS production levels and those developed by the USDA planning staff are increases in cotton, corn and wheat and a decrease in soybeans. Although the alternative cotton production level is higher than the OBERS level, it still reflects a continuation of the historical decline in cotton production. Both corn and wheat production have been increasing over time and the planning staff felt that this trend would continue in South Carolina. Soybean production is also expected to expand rapidly in the future, but not as rapidly as is implied in the OBERS E' projections.

With the alternative level of production assumed by the planning staff, 231,000 acres of timber would be cleared and planted to agricultural crops. The Pee Dee Basin level of agricultural production resulting from the alternative level of state production is shown in Tables 50 and 51 for the years 2000 and 2020. The base year conditions are shown in Table 49.

Figure 23 shows the proportion of cropland and pasture acreage for various crops in the Yadkin Basin in 1970, 2000 and 2020. The biggest change is projected to take place in the acreage of corn and soybeans. Tables 46 and 47, show that the Yadkin Basin share of North Carolina production is expected to remain relatively constant in the future. Although total agricultural output is expected to increase between 2000 and 2020, yields are expected to increase even more rapidly so that total land in cropland and pasture will actually decline by 9.7 percent during the same period.

The large increase projected for soybeans at the state level is reflected

Table 48. Alternate Production Levels - South Carolina State Level, 2000 and 2020.

Year	1974 Base Year	2000 Obsers E'	2000 Alternate	2020 Obsers E'	2020 Alternate
-----Thousands-----					
Cotton (pounds)	125,280	39,260	48,000	22,080	36,000
Corn (bushels)	26,700	25,960	35,000	29,200	50,000
Wheat (bushels)	2,600	1,990	4,000	1,500	6,000
Oats (bushels)	3,200	910	910	390	390
Barley (bushels)	207	1,590	1,590	1,940	1,940
Hay-Pasture (tons)	357 ^{1/}	2,390	2,390	2,979	2,979
Sorghum (bushels)	84	80	80	40	40
Soybeans (bushels)	20,400	72,300	60,000	92,300	76,050
Tobacco (pounds)	136,300	155,800	155,800	193,900	193,900
Peanuts (pounds)	17,493	56,000	56,000	69,700	69,700

^{1/} Hay only.

Source: 27 and USDA Staff.

Table 49. Pee Dee Study Area, South Carolina Agricultural Production and Acreage, 1974 Base Year.

Crop	Study Area		State		Study Area Portion of State Level	
	Production	Acreage	Production	Acreage	Production	Acreage
	-----Thousands-----				-----Percent-----	
Cotton (lbs.)	59,040	164	125,280	252	47	65
Corn (bu.)	11,340	189	26,653	428	43	44
Wheat (bu.)	1,028	40	2,600	98	40	41
Oats (bu.)	785	19	3,234	77	24	25
Hay	50	24	307	156	16	15
Soybeans	10,092	514	20,409	1,029	49	50
Tobacco	131,933	65	136,338	66	97	98

Source: 25

Table 50. Pee Dee Basin, South Carolina Agricultural Production and Acreage Projections, 2000.

Crop	Basin		State		Basin Portion of State Level	
	Production	Acreage	Production	Acreage	Production	Acreage
	-----Thousands-----		-----		-----Percent-----	
Cotton (lbs.)	23,604	41	48,000	85	49	48
Corn (bu.)	17,970	225	35,000	468	51	48
Wheat (bu.)	1,674	32	4,000	79	42	41
Oats (bu.)	99	2	910	16	11	14
Barley (bu.)	325	6	1,590	32	20	20
Hay-Pasture (tons)	616	333	4,780	2,269	13	15
Soybeans (bu.)	26,500	719	60,000	1,688	44	43
Tobacco (lbs.)	136,300	52	155,800	59	87	88
Peanuts (lbs.)	27,800	9	56,000	18	50	50
Total Cropland		1,419		4,714		30

Table 51. Pee Dee Basin, South Carolina Agricultural Production and Acreage Projections, 2020.

Crop	Basin		State		Basin Portion of State Level	
	Production	Acreage	Production	Acreage	Production	Acreage
	-----Thousands-----		-----		-----Percent-----	
Cotton (lbs.)	20,283	32	36,000	58	56	55
Corn (bu.)	15,157	170	50,000	501	30	34
Wheat (bu.)	2,050	33	6,000	104	34	32
Oats (bu.)	37	0.7	390	6	10	12
Barley (bu.)	316	5	1,940	33	16	16
Hay-Pasture (tons)	596	239	5,956	2,133	11	10
Soybeans (bu.)	35,900	867	76,050	1,880	47	46
Tobacco (lbs.)	172,300	59	193,900	66	89	89
Peanuts (lbs.)	39,100	12	69,700	21	56	55
Total Cropland		1,418		4,802		30

Figure 23. Historical and Projected Cropland Acreage, 1970, 2000 and 2020.*

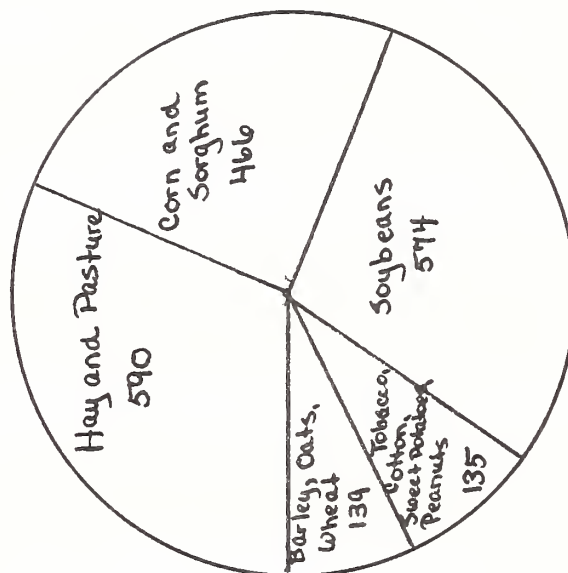
Yadkin Basin

1970



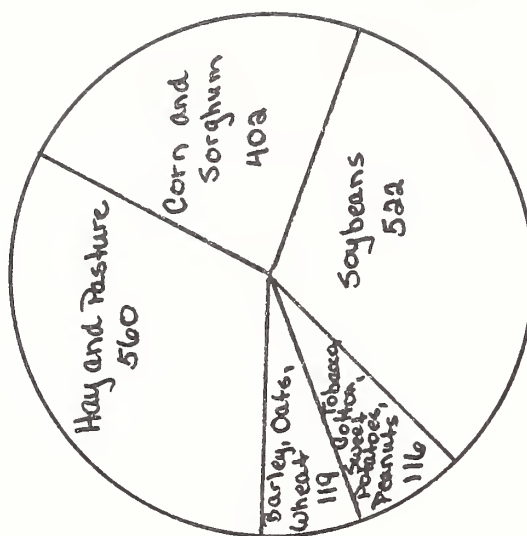
Total Cropland and Pasture
1499

2000



Total Cropland and Pasture
1904

2020



Total Cropland and Pasture
1719

*In thousand acres

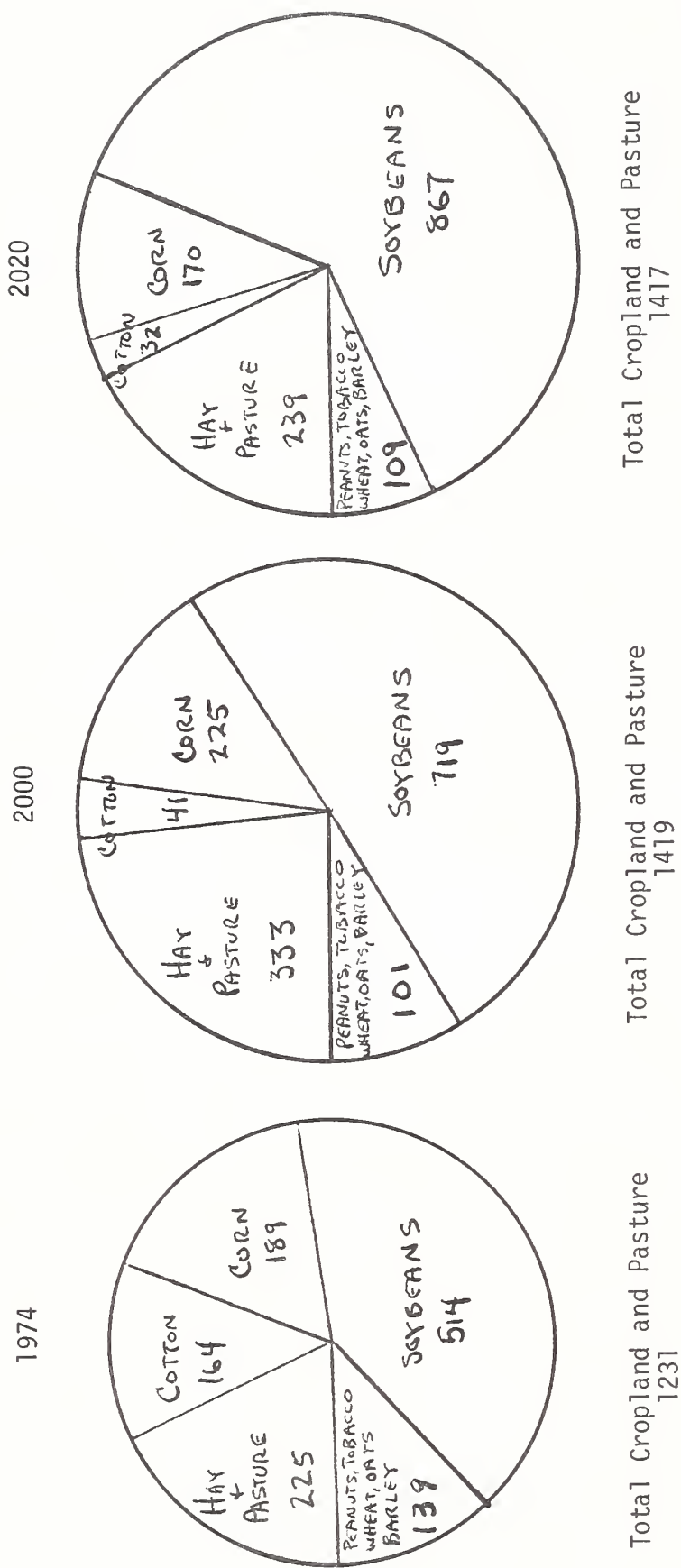
by a 68.7 percent increase in soybean acreage in the Pee Dee Basin between 1974 and 2020. The state share produced in the Pee Dee Basin is expected to remain relatively constant over time. Figure 24 shows the expected change in the proportions of various crops and the most obvious change is the large increase in soybean acreage and the decline in cotton acreage. As in the Yadkin Basin, the Pee Dee Basin cropland and pasture acreage does not increase even though production increases due to the change in the projected average crop yields.

Current and projected agricultural land use is presented in Table 52. The available land resources are expected to be utilized more intensively in the Pee Dee Basin where there will be little idle cropland or pasture by the year 2020. There is also expected to be considerably more conversion between pasture land and forest, and forest and cropland in the Pee Dee than the Yadkin Basin.

A sample procedure to disaggregate basin agricultural projections to the county level is presented in the Appendix. As with other statistical procedures, the expected accuracy of projections decreases as the area is disaggregated. For this reason, rather than making a point projection for a county, it is suggested that a range of values be used, analogous to confidence intervals used in statistical estimates.

Figure 24. Historical and Projected Cropland Acreage, 1974, 2000 and 2020.*

Pee Dee Basin



*In thousand acres

Table 52. Current and Projected Agricultural Land Use. Yadkin-Pee Dee Basin, Base Year, 2000, 2020.

	1970	Yadkin Basin 2000	2020
	-----acres-----		
Cropland	893,600	1,313,400	1,159,400
Hay and Pasture	604,700	590,500	560,000
Idle Cropland and Pasture	377,100	173,900	349,400
Forest Converted to Cropland	-	22,300	35,900
	1974	Pee Dee Basin 2000	2020
	-----acres-----		
Cropland	1,006,000	1,087,400	1,166,600
Hay and Pasture	225,000	332,900	238,500
Idle Cropland and Pasture	278,000	223,000	50,000
Forest Converted to Cropland	-	162,200	254,200
Pasture Converted to Forest	-	-	322,600

Future of Forest Resources

General Outlook. At the turn of the century farsighted public officials and citizen-leaders drew attention to the general deterioration of the nation's timber resources. It was not until the depression years, however, that the South's forest lands began to receive the attention needed to insure survival and development.

Economic and biological forces that have influenced forest resources development in the basin during the past 80 years will continue into the future. In the future, however, we will witness the accumulated benefits of both federal and state forestry programs as they have been carried out during the past 50 years to perpetuate and improve the study area's forest resources.

The data given below describes future conditions of the study area's timber resources. They are based upon the assumption that future management of the area's forest lands will follow prevailing practices. It is also assumed that there will be no acceleration of reforestation rates, no extensive use of fertilizers, and no appreciable change in other management practices.

Decline in Forest Acreage. Pressures from increasing demands for agricultural production and from urban development will bring a gradual decline in forest land over the next 40-45 years. Beginning in the mid 1930's the states of South Carolina and North Carolina supported forestry programs that influenced a gradual increase in timber lands. A peak in forest acreage, however, was reached during the late 1960's. Recent forest surveys carried out in both states point to a decline near the 3 percent mark for a ten-year period. Forest surveys conducted in neighboring states reveal a similar decline in forest land base.

FORESTRY PROJECTIONS

FOREST LAND PROJECTIONS

	<u>1990</u>	<u>2000</u>	<u>2020</u>
	-----thousand acres-----		
Yadkin Study Area (N.C.)	3,598.0	3,518.0	3,358.0
Pee Dee Study Area (S.C.)	3,396.6	3,326.6	3,186.6
	- - - - -	- - - - -	- - - - -
Yadkin - Pee Dee Economic Study Area	6,994.6	6,844.6	6,544.6

Future Forest Production. Management practices carried out during the past 2 to 3 decades will assure a continued increase in timber volume in spite of a declining forest land base. This increase, however, will reach a peak at the end of the century. By 2020 the decline in forest acreage will bear directly on wood fiber volume to produce a decline in total growth. Net growth by state subareas will occur as indicated below:

NET ANNUAL GROWTH VOLUME PROJECTIONS

	<u>1990</u>	<u>2000</u>	<u>2020</u>
	(million cubic feet)		
Yadkin Study Area (N.C.)	257.2	264.2	257.0
Pee Dee Study Area (S.C.)	251.1	259.7	257.2
	-----	-----	-----
Totals	508.3	523.9	512.2

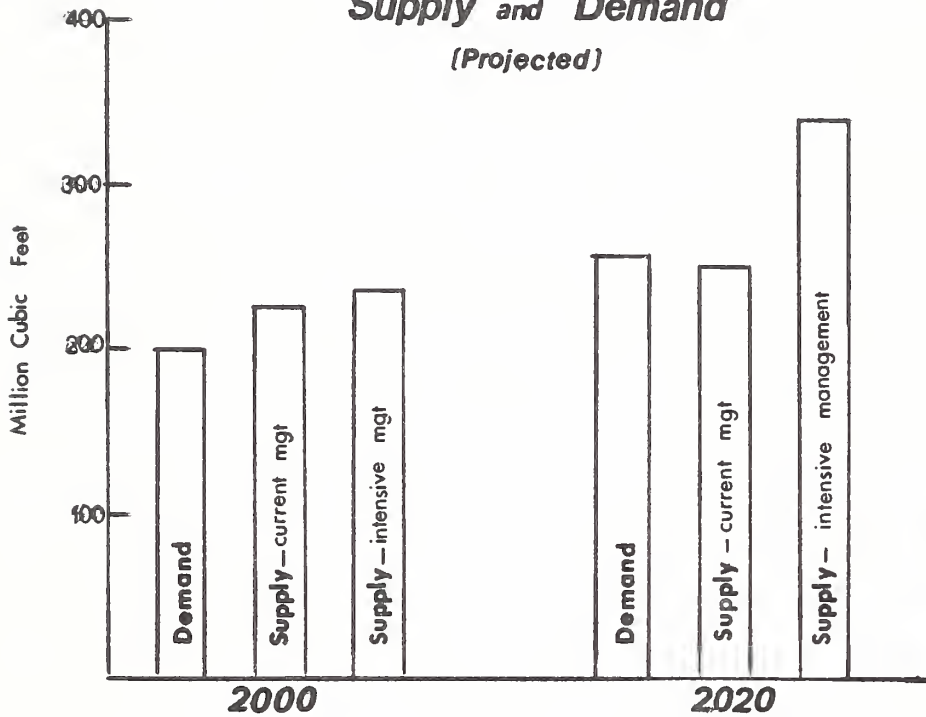
Annual harvest, or timber drain, will remove less than the net annual growth during the next forty years. By 2020, however, the drain will equal the net annual growth as timber is cut to meet anticipated demands for wood fiber.

jections, Series E', has an anticipated share in contributing to the Nation's raw wood requirements. The graph below shows relationship of these demands and the capacity of the basin to provide the raw material.

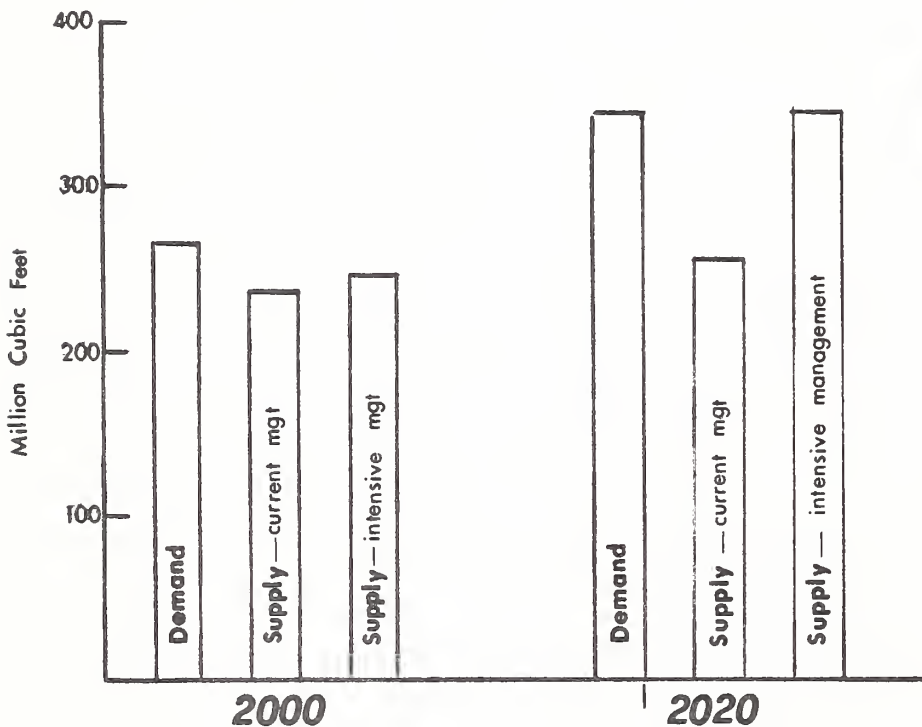
Wood Fiber

Supply and Demand

(Projected)



Yadkin
STUDY AREA



Pee Dee
STUDY AREA

TIMBER DRAIN PROJECTIONS

	<u>1990</u>	<u>2000</u>	<u>2020</u>
	-----million cubic feet-----		
Yadkin Study Area	197.5	225.3	257.0
Pee Dee Study Area	216.0	236.8	257.2
Yadkin - Pee Dee Economic Study Area	413.5	462.1	512.2

Future Demands. The Yadkin - Pee Dee Basin, according to OBERS Projections, Series E', has an anticipated share in contributing to the nation's raw wood requirements. The table below gives demand figures to the state subarea.

WOOD PRODUCTION DEMANDS

	<u>2000</u>	<u>2020</u>
	-million cubic feet-	
Yadkin Basin	200.5	258.6
Pee Dee Basin	266.1	344.2
Yadkin - Pee Dee Basin	466.6	602.8

WATER PROJECTIONS

Projected Water Use

Current and projected water use for the Yadkin-Pee Dee Economic Study Area is presented in Table 53. These water uses refer only to agricultural water use for irrigation and rural domestic water use. Domestic rural water use is expected to increase only slowly between 1977 and 2020.

Present use of water for irrigation in the Study Area is found primarily on high value crops such as tobacco and vegetables. The quantity of water is expected to increase by 171 percent from the present rather limited use in the Study Area (See Tables 35 and 36).

Table 53. Present and Projected Water Use - Yadkin - Pee Dee Economic Study Area.

	Irrigation Acre-feet			Rural Water mgd		
	1977	2000	2020	1977	2000	2020
Yadkin Main Stem Sub-Area	25,000	42,000	57,000	-	73.3	80.6
Lumber Sub-Area	3,100	5,500	7,000	-	15.6	16.0
Yadkin Study Area	28,100	47,500	64,000	-	88.9	96.6
Region 6	3,100	7,400	11,400	13.6	15.5	17.0
Region 7	1,900	4,400	6,900	20.8	25.6	28.1
Region 8	7,400	17,600	27,400	13.0	20.2	21.6
Pee Dee Study Area	12,400	29,400	45,700	47.4	61.3	66.7
Yadkin - Pee Dee Economic Study Area	40,500	76,900	109,700	-	150.2	163.3

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APPENDIX

Table A-1. Population, Urban and Rural Components, Yadkin Study Area, 1960 and 1970.

Area	1960				1970			
	Urban		Rural		Urban		Rural	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<u>Yadkin Main Stem Subarea</u>								
Anson	3744	15	21218	85	3977	17	19511	83
Cabarrus	46162	68	21975	32	47769	64	26860	36
Davidson	31283	39	48210	61	35350	37	60277	63
Davie	0	0	16728	100	2529	13	16326	87
Forsyth	131118	69	58310	31	148289	69	66059	31
Guilford	187552	76	58968	24	220084	76	68506	24
Iredell	26762	43	35764	57	31883	44	40314	56
Montgomery	0	0	18408	100	0	0	19267	100
Randolph	15579	25	45918	75	22920	30	53438	70
Rowan	39060	47	43757	53	37932	42	52103	58
Richmond	13183	34	26019	66	13337	33	26552	67
Stanly	12261	30	28612	70	11165	26	31657	74
Surry	9923	21	38282	79	12765	25	38650	75
Wilkes	4197	9	41072	91	3413	7	46110	93
Yadkin	0	0	22804	100	0	0	24599	100
Subarea Total	520824	50	526045	50	591413	50	590229	50
<u>Lumber Subarea</u>								
Columbus	4683	10	44290	90	4195	9	42742	91
Robeson	18072	20	71030	80	23171	27	61671	73
Scotland	8242	33	16941	67	8779	33	18150	67
Subarea Total	30997	19	132261	81	36145	23	122563	77
Yadkin Study Area Total	551821	46	658306	54	627558	47	712792	53

Source: 15, 19

Table A-2. Population, Urban and Rural Components, Pee-Dee Study Area, 1960 and 1970

Area	1960			1970		
	Urban Number	Urban Percent	Rural Number	Urban Number	Urban Percent	Rural Number
<u>Region 6</u>						
Clarendon	3917	13	25573	4025	16	21579
Kershaw	6842	20	26743	8532	25	26195
Lee	3586	16	18246	3404	19	14919
Sumter	30126	40	44815	37745	48	41680
Region Total	44471	28	115377	53706	34	104373
<u>Region 7</u>						
Chesterfield	5171	15	28546	5627	17	28040
Darlington	13102	25	39826	15007	28	38435
Dillon	6173	20	24411	5991	21	22847
Florence	30781	36	53657	32065	36	57571
Marion	13403	42	18611	13441	44	16829
Marlboro	6963	24	21566	9992	37	17159
Region Total	75593	29	186617	82123	31	180881
<u>Region 8</u>						
Georgetown	15201	44	19597	13280	40	20220
Horry	16397	24	51850	20636	29	49356
Williamsburg	3902	10	37030	3431	10	30812
Region Total	35500	25	108477	37347	27	100388
Pee Dee Study Area Total	155564	27	410471	173176	31	385642
Yadkin - Pee Dee Economic Study Area Total	707385	40	1068777	800734	42	1098434

Source: 15, 19

Table A-3. Population Characteristics, Yadkin Study Area, 1960-1970.

Area	Population		Percent Change 1960-1970		
	1960	1970	Total Population	Negro Population	Net Migration
<u>Yadkin Main Stem Subarea</u>					
Anson	24962	23488	-5.9	-8.8	-16.1
Cabarrus	68137	74629	9.5	9.7	-1.9
Davidson	79493	95627	20.3	8.5	6.2
Davie	16728	18855	12.7	7.7	2.1
Forsyth	189428	214348	13.2	4.3	.4
Guilford	246520	288590	17.1	24.6	3.1
Iredell	62526	72197	15.5	10.7	3.0
Montgomery	18408	19267	4.7	4.4	-5.5
Randolph	61497	76358	24.2	9.1	11.1
Rowan	82817	90035	8.7	2.9	-1.3
Richmond	39202	39889	1.8	-.6	-9.0
Stanly	40873	42822	4.8	4.0	-5.7
Surry	48205	51415	6.7	-10.5	-5.4
Wilkes	45269	49524	9.4	-5.5	-2.6
Yadkin	22804	24599	7.9	9.7	-2.8
Total	1046869	1181643	12.9		0.4
<u>Lumber Subarea</u>					
Columbus	48973	46937	-4.2	-14.4	-17.4
Robeson	89102	84842	-4.8	-16.7	-21.2
Scotland	25183	26929	6.9	-12.4	-7.5
Total	163258	158708	-2.8		-17.9
<u>Yadkin Study Area Total</u>					
Yadkin Study Area Total	1210127	1340351	10.8		-2.0

Source: 15, 19

Table A-4. Population Characteristics, Pee Dee Study Area, 1960-1970.

Area	Population		Percent Change 1960-1970		
	1960	1970	Total Population	Negro Population	Net Migration
<u>Region 6</u>					
Clarendon	29490	25604	-13.2	-21.1	-29.5
Kershaw	33585	34727	3.4	-17.3	-9.2
Lee	21832	18324	-16.1	-23.7	-30.2
Sumter	74941	79425	6.0	-5.5	-15.4
Total	159848	158080	-1.1		-22.2
<u>Region 7</u>					
Chesterfield	33717	33667	-.1	-11.3	-14.4
Darlington	52928	53442	1.0	-13.6	-12.8
Dillon	30584	28838	-5.7	-15.3	-24.6
Florence	84438	89636	6.2	-10.5	-8.5
Marion	32014	30270	-5.4	-13.0	-18.0
Marlboro	28529	27151	-4.8	-14.3	-4.8
Total	262210	263004	.3		-16.5
<u>Region 8</u>					
Georgetown	34798	33500	-3.7	-10.7	-19.5
Horry	68247	69992	2.6	-4.4	-14.9
Williamsburg	40932	34243	-16.3	-23.2	-32.3
Total	143977	137735	-4.3		-22.2
Pee Dee Study Area Total	566035	558819	-1.2		-19.6

Source: 15, 19

Table A-5. Population Characteristics, Pee Dee Study Area, 1970-1976.

Area	1976 Population	Percent Change 1970-1976		1976 Population Density (persons/sq. mile)
		Total Population	Net Migration	
<u>Region 6</u>				
Clarendon	27400	6.8	2.9	45.7
Kershaw	36300	4.7	-0.2	46.5
Lee	17700	-3.6	-8.0	43.3
Sumter	82800	4.2	-4.5	123.2
Total	164200	3.7	-2.7	66.7
<u>Region 7</u>				
Chesterfield	35000	4.0	-1.4	44.3
Darlington	56300	5.3	-1.1	103.7
Dillon	30100	4.3	-2.6	74.0
Florence	99400	10.9	4.2	123.5
Marion	32300	6.8	1.4	66.3
Marlboro	28400	4.6	-2.0	58.8
Total	281500	6.6	0.6	80.1
<u>Region 8</u>				
Georgetown	38000	13.3	5.9	46.8
Horry	86400	23.5	15.6	74.9
Williamsburg	35300	3.1	-4.1	37.8
Total	159700	13.8	7.2	55.0

Pee Dee Study Area Total	605400	7.7	2.9	68.2
South Carolina	2848000	9.9	3.7	94.2

Source: 12, 25

Table A-6. Population Characteristics, Yadkin Study Area, 1970-1976.

Area	1976 Population	Percent Change 1970-1976		1976 Population Density (persons/sq. mile)
		Total Population	Net Migration	
<u>Yadkin Main Stem Subarea</u>				
Anson	23800	1.5	-2.6	44.7
Cabarrus	77700	4.1	0.1	214.0
Davidson	101000	5.6	0.5	184.0
Davie	21300	12.9	8.0	80.4
Forsyth	227000	5.5	1.4	542.4
Guilford	302900	5.0	0.6	462.5
Iredell	76900	6.5	2.4	134.4
Montgomery	19400	0.8	-3.3	39.8
Randolph	82600	8.2	3.4	103.6
Rowan	91500	1.7	-1.4	175.1
Richmond	41600	4.3	-0.2	87.7
Stanly	44800	4.6	1.3	112.6
Surry	55000	7.0	2.6	102.6
Wilkes	54000	9.0	3.8	71.3
Yadkin	27100	10.1	6.3	80.7
Total	1246600	5.2	1.1	162.6
<u>Lumber Subarea</u>				
Columbus	51600	9.9	5.1	54.6
Robeson	93400	10.1	1.2	98.5
Scotland	29300	8.9	1.1	92.0
Total	174300	9.0	2.1	78.8
<hr/>				
Yadkin Study Area Total	1420900	5.6	1.2	143.9
North Carolina	5469000	7.6	2.4	112.1

Source: 11, 25

Table A-7. Components of population change by race, Yadkin Study Area, 1960 and 1970.

Area	Population		Change	
	1970	1960	Number	Percent
<u>Yadkin Main Stem Subarea</u>				
Anson - White	12541	13000	-459	-3.5
Non-white	10947	11962	-1015	-8.5
Cabarrus - White	62584	57284	5300	9.3
Non-white	12045	10853	1192	11.0
Davidson - White	86063	70847	15216	21.5
Non-white	9564	8646	918	10.6
Davie - White	16602	14654	1948	13.3
Non-white	2253	2074	179	8.6
Forsyth - White	166079	143661	22418	15.6
Non-white	48269	45767	2502	5.5
Guilford - White	223593	195057	28536	14.6
Non-white	64997	51463	13534	26.3
Iredell - White	59774	51435	8339	16.2
Non-white	12423	11091	1332	12.0
Montgomery - White	14467	13816	651	4.7
Non-white	4800	4592	208	4.5
Randolph - White	70724	56398	14326	25.4
Non-white	5634	5099	535	10.5
Rowan - White	75521	68860	6661	9.7
Non-white	14514	13957	557	4.0
Richmond - White	28046	27402	644	2.4
Non-white	11843	11800	43	0.4
Stanly - White	38102	36403	1699	4.7
Non-white	4720	4470	250	5.6
Surry - White	48825	45388	3437	7.6
Non-white	2590	2817	-227	-8.1
Wilkes - White	46940	42566	4374	10.3
Non-white	2583	2703	-120	-4.4
Yadkin - White	23331	21669	1662	7.7
Non-white	1268	1135	133	11.7
<u>Lumber Subarea</u>				
Columbus - White	32017	31829	188	0.6
Non-white	14920	17144	-2224	-13.0
Robeson - White	36262	36506	-244	-.7
Non-white	48580	52596	-4016	-7.6
Scotland - White	16754	14078	2676	19.0
Non-white	10175	11105	-930	-8.4

Source: 15, 19

Table A-8. Components of population change by race, Pee Dee Study Area, 1960 and 1970.

Area	Population		Change	
	1970	1960	Number	Percent
<u>Region 6</u>				
Clarendon - White	9734	9360	374	4.0
Non-white	15870	20130	-4260	-21.2
Kershaw - White	23681	20222	3459	17.1
Non-white	11046	13363	-2317	-17.3
Lee - White	7359	7459	-100	-1.3
Non-white	10964	14373	-3409	-23.7
Sumter - White	46339	39846	6493	16.3
Non-white	33086	35095	-2009	-5.7
<u>Region 7</u>				
Chesterfield - White	22602	21210	1392	6.6
Non-white	11065	12507	-1442	-11.5
Darlington - White	33146	29420	3726	12.7
Non-white	20275	23508	-3233	-13.8
Dillon - White	16656	16355	301	1.8
Non-white	11960	14229	-2269	-16.0
Florence - White	56864	47934	8930	18.6
Non-white	32646	36504	-3858	-10.6
Marion - White	14968	14415	553	3.8
Non-white	15297	17599	-2302	-13.1
Marlboro - White	15273	14608	665	4.6
Non-white	11832	13921	-2089	-15.0
<u>Region 8</u>				
Georgetown - White	17233	16652	581	3.5
Non-white	16204	18146	-1942	-10.7
Horry - White	52526	50005	2521	5.0
Non-white	17398	18242	-844	-4.6
Williamsburg - White	13376	13716	-340	-2.5
Non-white	20867	27216	-6349	-23.3

Source: 15, 19

Table A-9. Education Characteristics of Persons 25 Years and Older, Yadkin Study Area, 1960 and 1970

Area	No School 1960	No School 1970	Completed Elementary				Completed High School 1960	Completed High School 1970	Some College 1960	Some College 1970	College or more 1960	College or more 1970	Total Population 25 yrs. + 1960	Total Population 25 yrs. + 1970	Median ye: of School 1960	Median ye: of School 1970
			Some Elementary 1960	Some Elementary 1970	8 yrs. + 1960	8 yrs. + 1-3 yrs. 1970										
Yadkin Main Stem Subarea																
Anson	533	505	5094	4077	3170	4050	2139	2645	633	598	504	491	12073	12366	8.3	9
Cabarrus	1025	743	12555	11652	10493	15361	6539	7380	2256	2996	1544	2283	37218	41835	8.6	9
Davidson	1217	1018	17145	15296	11416	20214	7788	9897	2181	3042	1777	2692	41524	52219	8.6	9
Davie	205	189	4046	3090	2593	4310	1595	2159	370	424	310	471	9119	10643	8.3	9
Forsyth	2270	1648	31461	24356	27145	36858	23119	28308	8017	10752	9079	13615	101091	115537	10.3	11
Guilford	2693	2511	39549	31635	35557	50151	26716	32130	13417	16754	12099	19555	130031	152736	10.3	11
Iredell	759	771	13104	10646	9184	14911	6859	8262	2237	2904	1492	2290	33635	39784	8.9	10
Montgomery	358	251	4049	3415	2568	3636	1576	1950	491	627	345	500	9387	10379	8.3	9
Randolph	742	587	13583	12769	9724	16433	6244	8030	1464	2329	1237	1989	32994	42137	8.6	9
Rowan	852	888	16720	14600	13510	19360	10043	10045	3026	3436	2281	3408	46432	51737	9.3	10
Richmond	887	539	8319	6523	5587	7778	3331	4010	998	1196	889	1036	20011	21082	8.4	9
Stanly	614	319	8670	6753	6448	8928	4301	5329	1184	1653	949	1313	22166	24295	8.7	10
Surry	886	700	11950	10394	6282	9098	4368	5851	1141	1654	1078	1401	25705	29098	8.1	9
Wilkes	781	550	10266	10064	5106	8632	3318	5427	809	1287	828	1017	22888	26977	7.7	9
Yadkin	477	328	5843	5069	3112	4653	2050	3142	456	618	343	446	12281	9256	8.0	9
Lumber Subarea																
Columbus	901	556	10526	8040	6002	8457	3431	4475	1089	1563	946	1153	22895	24244	8.1	9
Robeson	2011	1312	17657	13260	9256	13594	5046	6079	2250	2439	1986	2543	38206	39227	7.9	9
Scotland	896	584	5295	4153	2679	3774	1487	1887	615	1078	575	1160	11547	12636	7.6	9

Source: 15, 19

Table A-10. Education Characteristics of Persons 25 Years and Older, Pee-Dee Study Area, 1960 and 1970.

Area	No School		Some Elementary		Completed Elementary 8 yrs. + 1-3 yrs.		Completed High School		Some College		College or more		Total Population 25 yrs. +		Median years of School	
	1960	1970	1960	1970	1960	1970	1960	1970	1960	1970	1960	1970	1960	1970	1960	1970
Region 6																
Clarendon	1057	548	5847	4606	2648	3843	1234	1406	513	552	559	539	11858	11494	7.0	8.4
Kershaw	917	374	6631	5050	3881	5030	2614	3827	847	1417	951	1812	15841	17510	8.2	10.5
Lee	624	327	4457	3151	1991	2527	982	1346	451	512	454	460	8959	8323	7.2	8.9
Sumter	1364	915	11397	9121	8108	10247	6632	8463	2308	3145	2340	3329	32149	35220	9.3	11.0
Region 7																
Chesterfield	1171	707	7403	5687	3679	5610	2056	2877	715	937	774	969	15798	16787	7.6	9.3
Darlington	1137	1017	10622	7952	5860	8878	3636	4512	1381	1957	1449	1999	24085	26315	8.1	9.8
Dillon	955	577	6357	5315	2794	3397	1490	2298	675	770	700	831	12971	13188	7.3	8.6
Florence	1947	1395	15805	11984	10284	15389	6123	8906	2512	3490	2379	3504	39050	44668	8.5	10.4
Marion	825	500	6610	5008	3318	4574	2088	2826	757	902	804	952	14402	14762	7.8	9.5
Marlboro	903	551	6436	5042	2770	4269	1476	1678	737	820	714	809	13036	13169	7.4	8.8
Region 8																
Georgetown	1315	684	6481	5519	3361	4926	1999	2520	737	815	808	1126	14701	15590	7.6	9.2
Horry	1360	941	11887	9997	8324	10990	5709	7729	1830	2774	1525	2508	30635	34942	8.7	10.4
Williamsburg	1364	703	7677	5615	3966	5052	1714	2041	713	899	918	1033	16352	15343	7.3	9.0

Source: 15, 19

Table A-11. Median Family Income, Number of Families, and Per Capita Income
Yadkin Study Area, 1970.

Area	Number of Families	Median Income	Per Capita Income
<u>Yadkin Main Stem Subarea</u>			
Anson	5801	\$6013	\$1744
Cabarrus	20148	8909	2772
Davidson	25899	8563	2685
Davie	5118	7669	2379
Forsyth	56050	9286	3109
Guilford	73879	9652	3185
Iredell	19329	8073	2569
Montgomery	4941	6934	2138
Randolph	21040	8894	2731
Rowan	24247	8546	2688
Richmond	10111	7105	2180
Stanly	11845	8049	2533
Surry	14418	7134	2329
Wilkes	13312	6564	2093
Yadkin	6935	7403	2303

Yadkin Main Stem Subarea Total	313073	\$8632	\$2782
<u>Lumber Subarea</u>			
Columbus	11645	\$5846	\$1823
Robeson	19334	5675	1637
Scotland	6378	7030	2033

Lumber Subarea Total	37357	\$5960	\$1759

Yadkin Study Area	350430	\$8347	\$2661

North Carolina	1292466	\$7770	\$2474

Source: 19

Table A-12. Median Family Income, Number of Families, and Per Capita Income
Pee Dee Study Area, 1970.

Area	Number of Families	Median Income	Per Capita Income
<u>Region 6</u>			
Clarendon	5559	\$4458	\$1339
Kershaw	8604	8258	2420
Lee	3950	5084	1714
Sumter	18352	6407	1970
Region 6 Total	36465	\$6403	\$1937
<u>Region 7</u>			
Chesterfield	8376	\$6759	\$2094
Darlington	13126	7030	2103
Dillon	6386	5618	1613
Florence	21978	7363	2218
Marion	7149	5725	1752
Marlboro	6333	6236	1743
Region 7 Total	63348	\$6741	\$2009
<u>Region 8</u>			
Georgetown	7637	\$6357	\$1830
Horry	17512	6101	2027
Williamsburg	7581	4870	1389
Region 8 Total	32730	\$5876	\$1820

Pee Dee Study Area	132543	\$6434	\$1943
South Carolina	628689	\$7620	\$2303
United States	51168599	\$9586	\$3119

Source: 19

Table A-13. Families Below Poverty Level, Yadkin Study Area, North Carolina, 1970.

Area	Total Number of Families	Number of Families Below Poverty Level	Percent of Families Below Poverty Level
<u>Yadkin Main Stem Subarea</u>			
Anson	5801	1580	27.2
Cabarrus	20148	1795	8.9
Davidson	25899	2681	10.4
Davie	5118	719	14.0
Forsyth	56050	6180	11.0
Guilford	73879	6936	9.4
Iredell	19329	2190	11.3
Montgomery	4941	967	19.6
Randolph	21040	2039	9.7
Rowan	24247	2502	10.3
Richmond	10111	2150	21.3
Stanly	11845	1201	10.1
Surry	14418	2262	15.7
Wilkes	13312	2674	20.1
Yadkin	6935	1147	16.5
<u>Region Total</u>	<u>313073</u>	<u>37023</u>	<u>11.8</u>
<u>Lumber Subarea</u>			
Columbus	11645	3225	27.7
Robeson	19334	6102	31.6
Scotland	6378	1515	23.8
<u>Region Total</u>	<u>37357</u>	<u>10842</u>	<u>29.0</u>
Study Area	350430	47865	13.7
North Carolina	1292466	211222	16.3

Source: 19

Table A-14. Families Below Poverty Level, Pee-Dee Study Area, South Carolina, 1970.

Area	Total Number of Families	Number of Families Below Poverty Level	Percent of Families Below Poverty Level
<u>Region 6</u>			
Clarendon	5559	2360	42.5
Kershaw	8604	1615	18.8
Lee	3950	1573	39.8
Sumter	18352	4747	25.9
<u>Region Total</u>	<u>36465</u>	<u>10295</u>	<u>28.2</u>
<u>Region 7</u>			
Chesterfield	8376	1866	22.3
Darlington	13126	3070	23.4
Dillon	6386	2105	33.0
Florence	21978	4804	21.9
Marion	7149	2270	31.8
Marlboro	6333	1736	27.4
<u>Region Total</u>	<u>63348</u>	<u>15851</u>	<u>25.0</u>
<u>Region 8</u>			
Georgetown	7637	2260	29.6
Horry	17512	4417	25.2
Williamsburg	7581	3041	40.1
<u>Region Total</u>	<u>32730</u>	<u>9718</u>	<u>29.7</u>
Study Area	132543	35864	27.1
South Carolina	628689	120080	19.1

Source: 19

Table A-15. Families Above \$10,000 Level, Yadkin Study Area, North Carolina, 1970.

Area	Total Number of Families	Number of Families Above \$10,000 Level	Percent of Families Above \$10,000 Level
<u>Yadkin Main Stem Subarea</u>			
Anson	5801	1167	20.1
Cabarrus	20148	8152	40.5
Davidson	25899	9633	37.2
Davie	5118	1558	30.4
Forsyth	56050	24926	44.5
Guilford	73879	35044	47.4
Iredell	19329	6553	33.9
Montgomery	4941	1255	25.4
Randolph	21040	8345	39.7
Rowan	24247	9000	37.1
Richmond	10111	2996	29.6
Stanly	11845	3807	32.1
Surry	14418	3636	25.2
Wilkes	13312	3057	23.0
Yadkin	6935	1918	27.7
<u>Region Total</u>	<u>313073</u>	<u>121047</u>	<u>38.7</u>
<u>Lumber Subarea</u>			
Columbus	11645	2440	21.0
Robeson	19334	4002	20.7
Scotland	6378	1808	28.3
<u>Region Total</u>	<u>37357</u>	<u>8250</u>	<u>22.1</u>
Study Area	350430	129297	36.9
North Carolina	1292466	436338	33.8

Source: 19

Table A-16. Families Above \$10,000 Level, Pee-Dee Study Area, South Carolina, 1970.

Area	Total Number of Families	Number of Families Above \$10,000 Level	Percent of Families Above \$10,000 Level
<u>Region 6</u>			
Clarendon	5559	899	16.2
Kershaw	8604	3246	37.7
Lee	3950	764	19.3
Sumter	18352	4704	25.6
<u>Region Total</u>	<u>36465</u>	<u>9613</u>	<u>26.4</u>
<u>Region 7</u>			
Chesterfield	8376	2150	25.7
Darlington	13126	3952	30.1
Dillon	6386	1303	20.4
Florence	21978	6865	31.2
Marion	7149	1496	20.9
Marlboro	6333	1466	23.1
<u>Region Total</u>	<u>63348</u>	<u>17232</u>	<u>27.2</u>
<u>Region 8</u>			
Georgetown	7637	1958	25.6
Horry	17512	4069	23.2
Williamsburg	7581	1219	16.1
<u>Region Total</u>	<u>32730</u>	<u>7246</u>	<u>22.1</u>
Study Area	132543	34091	25.7
South Carolina	628689	208144	33.1

Source: 19

Table A-17. Unemployment in Yadkin Study Area, 1970 and 1977.

Area	Percent Unemployed	
	1970	1977
<u>Yadkin Main Stem Subarea</u>		
Anson	3.4	6.6
Cabarrus	2.1	4.0
Davidson	2.5	5.4
Davie	3.8	5.9
Forsyth	3.7	5.0
Guilford	2.3	5.4
Iredell	2.5	6.7
Montgomery	1.5	4.2
Randolph	1.9	4.5
Rowan	2.4	4.5
Richmond	4.6	6.6
Stanly	2.0	4.9
Surry	3.3	6.6
Wilkes	2.9	4.5
Yadkin	4.2	5.4
Total	2.9	5.2
<u>Lumber Subarea</u>		
Columbus	4.5	8.1
Robeson	3.9	10.0
Scotland	6.1	6.2
Total	4.7	8.7
Yadkin Study Area	3.2	5.6
North Carolina	3.4	5.9

Source: 1, 10

Table A-18. Unemployment in Pee Dee Study Area, 1970 and 1977.

Area	Percent Unemployed	
	1970	1977
<u>Region 6</u>		
Clarendon	4.7	6.9
Kershaw	3.7	7.1
Lee	6.7	8.5
Sumter	5.0	8.6
Total	5.0	7.9
<u>Region 7</u>		
Chesterfield	3.4	7.9
Darlington	3.9	7.7
Dillon	3.8	10.2
Florence	3.8	8.7
Marion	8.8	9.5
Marlboro	5.3	9.9
Total	4.6	8.7
<u>Region 8</u>		
Georgetown	3.9	11.8
Horry	5.0	8.0
Williamsburg	4.2	7.0
Total	4.2	8.5
Pee Dee Study Area	4.5	8.5
South Carolina	3.8	7.2

Source: 6, 10

Table A-19. Selected Health Personnel, Yadkin Study Area.

Area	Total Resident Population July 1, 1966	Number of Health Persons						
		Per Population (1966)		Registered Nurses		Per Population (1967)		
		Pharmacists	Active	Total	Active	Dentists	Physicians (M.D.s)	
		Total	Active	Total	Active	Total	Active	
<u>Yadkin Main Stem Sub Area</u>								
Anson	24,500	4	3	45	42	4	7	7
Cabarrus	72,900	37	35	258	216	21	66	63
Davidson	94,500	32	30	166	136	21	42	40
Davie	18,200	10	10	41	33	3	6	6
Forsyth	209,900	112	103	981	763	92	452	439
Guilford	271,300	150	137	1081	829	119	299	284
Iredell	70,500	24	24	266	223	23	55	54
Montgomery	20,000	7	7	42	35	7	8	8
Randolph	73,600	20	19	146	115	16	34	32
Rowan	89,400	39	35	281	228	24	92	87
Richmond	39,600	13	12	100	85	9	24	24
Stanly	43,700	22	20	116	100	8	25	25
Surry	52,700	25	25	165	125	22	33	32
Wilkes	51,000	12	10	77	66	10	18	18
Yadkin	24,800	5	5	47	37	7	6	6
Sub Area Total	1,156,600	512	475	3812	3033	386	1167	1125
<u>Lumber Sub Area</u>								
Columbus	49,600	16	16	108	81	8	23	23
Robeson	89,800	30	27	193	162	17	53	52
Scotland	26,800	9	9	66	55	3	22	21
Sub Area Total	166,200	55	52	367	298	28	98	96
Yadkin Study Area	1,322,800	567	527	4179	3331	414	1265	1221

Source: 28

Table A-20. Selected Health Personnel, Pee Dee Study Area.

Area	Total Resident Population July 1, 1966	Number of Health Persons						
		Per Population (1966)		Registered Nurses		Per Population (1967)		
		Pharmacists		Total	Active	Dentists Total	Physicians (M.D.s) Total	Active
		Total	Active					
<u>Region 6</u>								
Clarendon	30,900	9	7	48	38	3	8	8
Kershaw	34,800	18	17	137	93	12	27	26
Lee	20,700	5	4	30	24	2	9	7
Sumter	77,700	22	18	226	152	17	68	65
Region Total	164,100	54	46	441	307	34	112	106
<u>Region 7</u>								
Chesterfield	33,700	15	14	44	34	8	14	14
Darlington	56,700	19	17	110	76	10	27	25
Dillon	34,000	12	11	53	34	5	15	12
Florence	93,700	33	30	333	252	29	96	93
Marion	31,300	11	11	74	55	5	24	24
Marlboro	30,000	6	6	56	40	5	15	15
Region Total	279,400	96	89	670	491	62	191	183
<u>Region 8</u>								
Georgetown	35,800	11	9	69	48	7	20	19
Horry	74,100	25	23	156	117	14	63	53
Williamsburg	38,700	7	6	50	38	6	15	15
Region Total	148,600	43	38	275	203	27	98	87
Pee Dee Total	592,100	193	173	1386	1001	123	401	376

Source: 28

Table A-21. Medical Facilities, Yadkin Study Area, 1973.

Area	1973 Population In Thousands	State & Local Govt.		Federal		Proprietary		Non Profit		Total	
		Hospitals	Beds	Hospitals	Beds	Hospitals	Beds	Hospitals	Beds	Hospitals (not including federal)	Beds
Yadkin Main Stem Subarea											
Anson	24	1	93	-	-	-	-	-	-	1	93
Cabarrus	77	1	375	-	-	-	-	-	-	1	375
Davidson	100	-	-	-	-	-	-	2	249	2	249
Davie	20	1	62	-	-	-	-	-	-	1	62
Forsyth	225	1	645	-	-	1	128	1	572	3	1345
Guilford	299	-	-	-	-	-	-	4	1149	4	1149
Iredell	76	-	-	-	-	-	-	3	488	3	488
Montgomery	19	-	-	-	-	-	-	1	83	1	83
Randolph	80	-	-	-	-	-	-	1	129	1	129
Rowan	92	-	-	-	-	-	-	1	332	1	332
Richmond	40	-	-	-	-	-	-	2	192	2	192
Stanly	44	-	-	-	-	-	-	1	129	1	129
Surry	53	1	100	-	-	-	-	1	130	2	230
Wilkes	53	1	136	-	-	-	-	-	-	1	136
Yadkin	26	1	70	-	-	-	-	-	-	1	70
Sub Area Total	1228	7	1381	-	-	1	128	17	3453	25	5062
Lumber Subarea											
Columbus	48	-	-	-	-	-	-	1	142	1	142
Robeson	88	-	-	-	-	-	-	1	342	1	342
Scotland	28	-	-	-	-	-	-	1	210	1	210
Sub Area Total	164	-	-	-	-	-	-	3	694	3	694
Yadkin Study Area Total											
Yadkin Study Area Total	1392	7	1381	-	-	1	128	20	4147	28	5756
North Carolina											
North Carolina	5273	43	6477	8	2438	7	493	85	13506	135	20476

Source: 28

Table A-22. Medical Facilities, Pee Dee Study Area, 1973.

Area	1973 Population In Thousands	State & Local Govt.		Federal		Proprietary		Non Profit		Total	
		Hospitals	Beds	Hospitals	Beds	Hospitals	Beds	Hospitals	Beds	Hospitals (not including federal)	Beds
Region 6											
Clarendon	26	1	104	-	-	-	-	-	-	1	104
Kershaw	35	1	163	-	-	-	-	-	-	1	163
Lee	17	1	35	-	-	-	-	-	-	1	35
Sumter	83	-	-	1	80	-	-	1	215	1	215
Region Total	161	3	302	1	80	-	-	1	215	4	517
Region 7											
Chesterfield	35	1	74	-	-	-	-	-	-	1	74
Darlington	53	-	-	-	-	3	66	1	100	4	166
Dillon	29	-	-	-	-	-	-	1	70	1	70
Florence	93	1	48	-	-	-	-	3	592	4	640
Marion	32	2	157	-	-	1	50	-	-	3	207
Marlboro	28	-	-	-	-	-	-	1	100	1	100
Region Total	270	4	279	-	-	4	116	6	862	14	1257
Region 8											
Georgetown	35	-	-	-	-	-	-	1	133	1	133
Horry	79	1	145	1	30	-	-	2	238	3	383
Williamsburg	35	1	62	-	-	-	-	-	-	1	62
Region Total	149	2	207	1	30	-	-	3	371	5	578
Pee Dee Study Area Total	580	9	788	2	110	4	116	10	1448	23	2352
South Carolina	2726	38	5161	7	1943	7	238	32	5013	77	10412

Source: 28

Table A-23. Housing 1970, Yadkin Study Area.

Year-Round Units			Occupied Year-Round Units				
Area	Total	Percent Change 1960-1970	Average persons/unit	Percent Owner occupied	Percent Lacking some or all plumbing	Total Percent	Percent with all plumbing
Yadkin Main Stem Subarea							
Anson	7431	7.9	3.4	68.7	30.9	15.2	34.9
Cabarrus	24381	17.9	3.1	67.5	8.1	9.1	82.3
Davidson	30714	32.7	3.2	72.8	11.8	9.7	74.5
Davie	6186	23.7	3.2	80.0	16.1	7.7	61.1
Forsyth	70592	23.7	3.1	64.8	3.5	7.0	92.6
Guilford	91038	25.7	3.2	63.2	3.6	7.9	85.7
Iredell	23705	27.5	3.2	73.5	9.9	8.6	77.9
Montgomery	6431	22.4	3.3	74.1	23.6	13.0	51.3
Randolph	24935	33.1	3.1	76.8	13.6	7.8	70.1
Rowan	29793	16.7	3.2	70.5	17.3	11.5	57.4
Richmond	13073	15.1	3.3	69.9	18.3	12.5	58.8
Stanly	14954	19.1	3.1	75.5	8.2	7.0	80.9
Surry	17296	20.6	3.1	75.1	17.3	9.6	59.6
Wilkes	15887	26.7	3.5	49.9	15.5	11.0	66.5
Yadkin	8296	21.9	3.1	79.3	17.3	6.3	65.0
Total	384712	23.7	3.2	68.2	9.8	8.8	76.7
Lumber Subarea							
Columbus	14793	13.8	3.4	69.4	25.8	12.8	41.8
Robeson	24061	12.3	3.8	57.6	28.6	19.2	44.9
Scotland	7848	18.7	3.6	58.5	25.7	17.3	49.2
Total	46702	13.8	3.6	61.5	27.2	16.9	44.6
Yadkin Study Area							
	431414	22.6	3.2	67.5	11.7	9.7	73.2
State	1619548	25.2	3.3	65.4	13.9	10.0	63.7

Source: 10

Source: 10

Table A-24. Housing 1970, Pee Dee Study Area.

Area	Year-Round Units		Occupied Year-Round Units				
	Total	Percent Change 1960-1970	Average persons/unit	Percent Owner occupied	Percent Lacking some or all plumbing	Total Percent	Percent With all plumbing
Region 6							
Clarendon	7250	6.8	4.0	57.7	44.4	23.9	24.9
Kershaw	11408	23.4	3.4	74.6	21.2	11.9	43.0
Lee	5172	-0.9	3.9	57.5	41.5	22.4	26.3
Sumter	22705	15.8	3.7	54.9	21.8	15.5	52.7
Total	46535	13.9	3.7	60.5	27.4	16.7	43.1
Region 7							
Chesterfield	10241	11.7	3.5	67.0	28.3	15.2	43.5
Darlington	16112	17.0	3.5	65.0	22.3	15.1	44.3
Dillon	8409	8.1	3.8	54.4	34.9	20.1	38.0
Florence	27534	22.6	3.5	64.3	19.0	13.5	53.9
Marion	9354	10.0	3.5	62.9	30.5	15.5	45.2
Marlboro	8144	2.1	3.6	56.6	33.1	18.9	40.0
Total	79794	14.6	3.5	62.8	25.3	15.5	46.5
Region 8							
Georgetown	10245	16.0	3.8	71.5	29.6	16.5	40.0
Horry	24253	30.0	3.4	61.7	17.6	11.9	56.3
Williamsburg	9826	0.1	4.0	64.8	41.0	20.0	28.2
Total	44324	18.8	3.6	64.7	25.6	14.8	46.3
Pee Dee Study Area	170653	15.4	3.6	62.6	26.0	15.6	46.0
State	804858	21.7	3.5	66.1	16.8	12.0	57.1

Source: 10

Table A-25. Yadkin Study Area Population Projections.

Area	2000	2020
<u>Yadkin Main Stem Subarea</u>		
Anson	26,300	26,400
Cabarrus	95,500	101,900
Davidson	143,200	172,700
Davie	28,600	34,000
Forsyth	303,200	355,700
Guilford	416,600	498,400
Iredell	96,500	106,500
Montgomery	22,000	23,300
Randolph	141,800	186,800
Rowan	117,100	131,100
Richmond	44,500	44,600
Stanly	57,500	63,500
Surry	70,700	81,800
Wilkes	75,800	91,000
Yadkin	45,100	59,400
Subarea Total	1,684,400	1,977,100
<u>Lumber Subarea</u>		
Columbus	57,900	62,700
Robeson	116,700	132,900
Scotland	36,000	40,000
Subarea Total	210,600	235,600
Study Area Total	1,895,000	2,212,700

Table A-26. Pee Dee Study Area Population Projections.

Area	2000	2020
<u>Region 6</u>		
Clarendon	31,400	35,000
Kershaw	43,100	51,000
Lee	20,100	23,000
Sumter	112,200	126,000
Region Total	206,800	235,000
<u>Region 7</u>		
Chesterfield	38,000	39,000
Darlington	67,000	74,000
Dillon	36,000	40,000
Florence	140,000	157,000
Marion	40,000	50,000
Marlboro	34,000	40,000
Region Total	355,000	400,000
<u>Region 8</u>		
Georgetown	54,000	62,000
Horry	160,000	171,000
Williamsburg	39,000	44,000
Region Total	253,000	277,000
Study Area	814,800	912,000

Table A-27. Projected Population, Urban and Rural Components, Yadkin Study Area, 2000 and 2020

	2000				2020			
	Urban		Rural		Urban		Rural	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<u>Yadkin Main Stem Subarea</u>								
Anson	6600	25	19700	75	7900	30	18500	70
Cabarrus	62100	65	33400	35	71300	70	30600	30
Davidson	57300	40	85900	60	77700	45	95000	55
Davie	7100	25	21500	75	11900	35	22100	65
Forsyth	212200	70	91000	30	256100	72	99600	28
Guilford	324900	78	91700	22	398700	80	99700	20
Iredell	43400	45	53100	55	53300	50	53200	50
Montgomery	0	0	22000	100	1200	5	22100	95
Randolph	56700	40	85100	60	84100	45	102700	55
Rowan	52700	45	64400	55	65500	50	65600	50
Richmond	15600	35	28900	65	16900	38	27700	62
Stanley	14400	25	43100	75	17100	27	46400	73
Surry	17700	25	53000	75	24500	30	57300	70
Wilkes	6100	8	69700	92	9100	10	81900	90
Yadkin	0	0	45100	100	3000	5	56400	95
Subarea Total	861356	52	807600	48	1098300	56	878800	44
<u>Lumber Subarea</u>								
Columbus	5800	10	52100	90	9400	15	53300	85
Robeson	40800	35	75900	65	59800	45	73100	55
Scotland	12600	35	23400	65	16000	40	24000	60
Subarea Total	59200	28	151400	72	85200	36	150400	64
Yadkin Study Area Total	920556	49	959000	51	1183500	53	1029200	47

Table A-28. Projected Population, Urban and Rural Components, Pee-Dee Study Area, 2000 and 2020

	2000				2020			
	Urban		Rural		Urban		Rural	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<u>Region 6</u>								
Clarendon	7900	25	23500	75	10500	30	24500	70
Kershaw	15100	35	28000	65	20400	40	30600	60
Lee	5000	25	15100	75	6900	30	16100	70
Sumter	61700	55	50500	45	75600	60	50400	40
Region Total	89700	43	117100	57	113400	48	121600	52
<u>Region 7</u>								
Chesterfield	9500	25	28500	75	11700	30	27300	70
Darlington	23400	35	43600	65	29600	40	44400	60
Dillon	9000	25	27000	75	12000	30	28000	70
Florence	56000	40	84000	60	62800	40	94200	60
Marion	20000	50	20000	50	27500	55	22500	45
Marlboro	15300	45	18700	55	20000	50	20000	50
Region Total	133200	37	221800	63	163600	41	236400	59
<u>Region 8</u>								
Georgetown	21600	40	32400	60	24800	40	37200	60
Horry	56000	35	104000	65	68400	40	102600	60
Williamsburg	5800	15	33200	85	8800	20	35200	80
Region Total	83400	33	169600	67	102000	37	175000	63
Pee Dee Study Area Total	306300	38	508500	62	379000	42	533000	58

An example of one procedure to project county level crop acreages is presented in Table A-1. All values are presented as index values with 1976 acreage = 100. Output from the state LP model and various regression models was used for this example. At the state level, it was projected that cropland and hayland would increase by 85 percent by 2020 using the state LP model. At the Basin level, when a regression model was used, the total was projected to increase by only 16 percent. A county projection based on historical trends for all cropland and hayland would lead to a projection of a 77 percent increase by 2020.

Using all sources of information, a projected increase of total cropland and hayland in 2020 of between 16 and 85 percent would seem to be a more reasonable estimate at the county level than a specific point estimate.

ALL CROPLAND AND HAYLAND

Acreage Projections (thousands)

Symbol

State LP Model

State Regression Model

Basin Regression Model

County Regression Model

1976	1980	1990	2000	2020
2,589			4,714	4,802
2,589			3,679	4,518
1,222			1,317	1,418
83			90	96

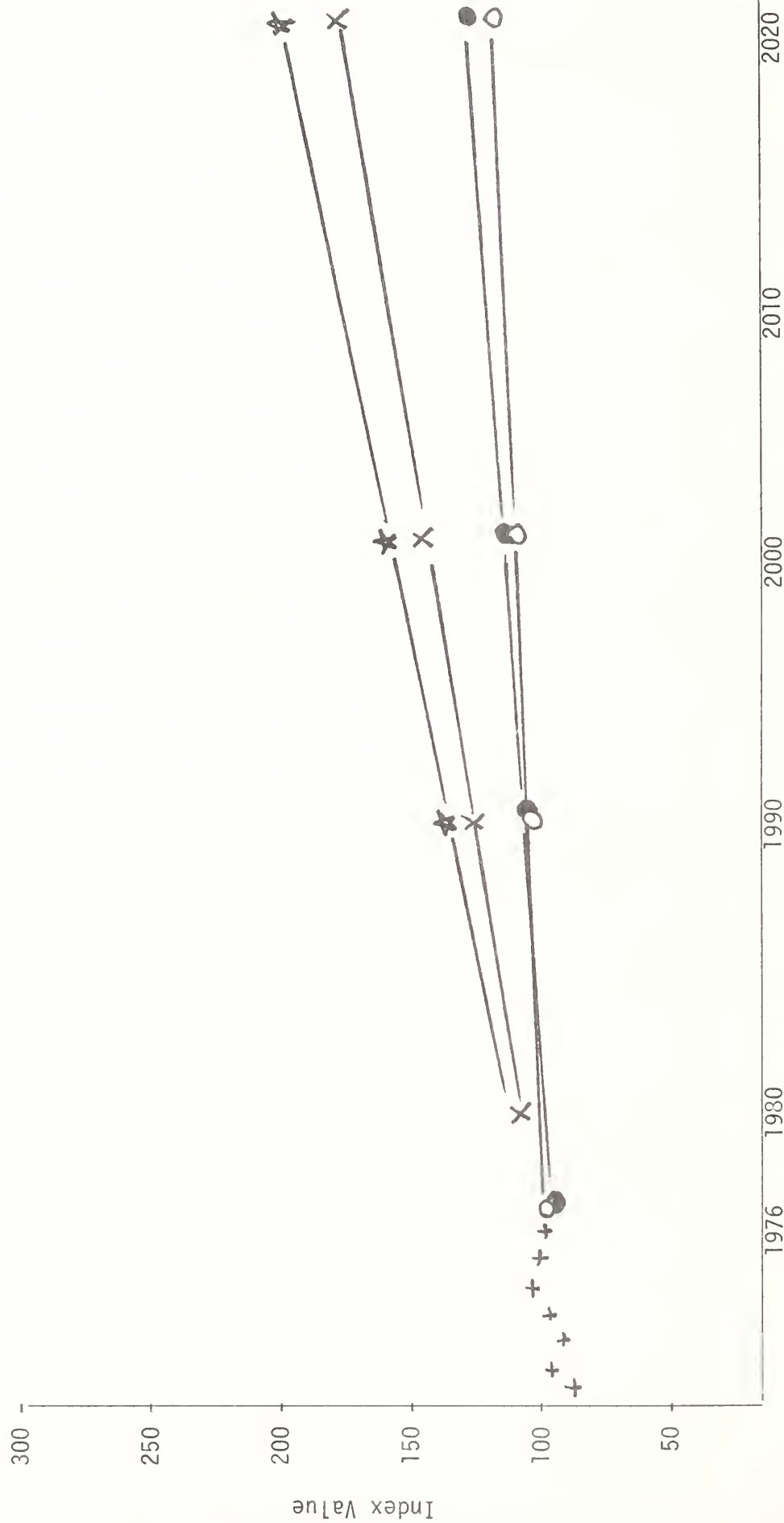


Table A-29. Area of Commercial Forest Land, by Forest-Type Group and County,
Yadkin Study Area, 1974

Forest-Type Groups

Yadkin Main Stem Subarea	All Type Groups	White Hemlock	Pine- Spruce- Fir	Longleaf- Slash	Loblolly- Shortleaf	Oak- Pine	Oak- Hickory	Oak-Gum Cypress	Elm-Ash Cottonwood	Maple-Bee Birch
-----Acres-----										
Anson	233794	0	0	0	116208	20931	92427	0	4228	0
Cabarrus	104783	0	0	0	23576	11600	69607	0	0	0
Davidson	190345	0	0	0	46739	10053	113446	5026	15081	0
Davie	76249	0	0	0	25284	4277	38260	0	8428	0
Forsyth	114768	0	0	0	27694	8708	65305	8707	4354	0
Guilford	198693	0	0	0	76861	29058	78246	0	14528	0
Iredell	169266	0	0	0	63335	24890	81041	0	0	0
Montgomery	248731	0	0	0	77246	55383	116102	0	0	0
Randolph	316013	0	0	0	62584	20863	232566	0	0	0
Rowan	153149	0	0	0	59195	0	93954	0	0	0
Richmond	219309	0	0	46572	73075	20418	62542	16702	0	0
Stanly	121124	0	0	0	33411	5144	77424	0	5145	0
Surry	213345	4944	0	0	39549	54378	109530	0	4944	0
Wilkes	370646	20066	0	0	53643	101125	175745	0	6689	13378
Yadkin	108452	0	0	0	47787	11946	36772	0	11947	0
Subarea Total	2838667	25010	0	46572	826187	378774	1442967	30435	75344	13378

Lumber Subarea

Columbus	417463	0	0	7549	194040	52672	33183	130019	0	0
Robeson	297421	0	0	3431	90628	30879	37741	134742	0	0
Scotland	124464	0	0	25140	56808	12148	24294	6074	0	0
Subarea Total	839348	0	0	36120	341476	95699	95218	270835	0	0
Yadkin Study Area Total	3678105	25010	0	82692	1167663	474473	1538185	301270	75344	13378

Table A-30. Area of Commercial Forest Land, by Forest-Type Group and County,
Pee Dee Study Area, 1968

Forest-Type Groups											
All Type Groups	White Hemlock	Pine	Spruce- Fir	Longleaf- Slash	Loblolly- Shortleaf	Oak- Pine	Oak- Hickory	Oak-Gum Cypress	Elm-Ash- Cottonwood	Maple-Beech Birch	
-----Acres-----											
<u>Region 6</u>											
Clarendon	214207	0	0	29378	44883	30099	33338	76509	0	0	
Kershaw	381083	0	0	56190	120189	80064	77176	23053	24411	0	
Lee	105677	0	0	7616	29132	16733	31074	16732	4390	0	
Sumter	225728	0	0	24808	54837	23249	46816	65733	10285	0	
Region Total	926695	0	0	117992	249041	150145	188404	182027	39086	0	
<u>Region 7</u>											
Chesterfield	322464	0	0	89477	56478	55999	91030	18952	10528	0	
Darlington	176830	0	0	19799	42687	32140	50465	29286	2453	0	
Dillon	135604	0	0	2082	24521	19588	43073	43888	2452	0	
Florence	274883	0	0	14250	92653	60852	27746	79382	0	0	
Marion	210128	0	0	1806	49423	38730	33727	76534	9908	0	
Marlboro	158075	0	0	16085	22288	18236	53932	32678	14856	0	
Region Total	1277984	0	0	143499	288050	225545	299973	280720	40197	0	
<u>Region 8</u>											
Georgetown	388809	0	0	29667	133701	62632	49761	113048	0	0	
Horry	486031	0	0	20575	159757	92824	107778	102652	2445	0	
Williamsburg	387096	0	0	27088	101478	73881	83284	101365	0	0	
Region Total	1261936	0	0	77330	394936	229337	240823	317065	2445	0	
Pee Dee Study											
Area Total	3466615	0	0	338821	932027	605027	729200	779812	81728	0	

Table A-31. Area of Commercial Forest Land, by Ownership and County, Yadkin Study Area, 1974

-----Acres-----									
<u>Yadkin Main Stem</u>									
<u>Subarea</u>									
All Ownerships	National Forest	Misc. Federal	State	County and Municipal	Forest Industry	Farmer	Misc. Pri. Corporate	Misc. Pri. Individual	
Anson	233794	0	2261	104	107	28862	93016	11715	97729
Cabarrus	104783	0	0	0	374	0	40605	0	63804
Davidson	190345	959	0	0	208	1698	85450	10512	91518
Davie	76249	0	0	0	0	332	50571	4214	21132
Forsyth	114768	0	3	0	1567	0	17414	21769	74015
Guilford	198693	0	30	371	3816	758	87173	9686	96859
Iredell	169266	0	0	25	129	936	87112	25065	55999
Montgomery	248731	35733	0	0	447	15099	89672	28666	79114
Randolph	316013	8364	0	0	1449	1628	151247	767	152558
Rowan	153149	0	3	512	200	753	93238	11655	46788
Richmond	219309	0	2417	28135	403	27425	89234	8753	62942
Stanly	121124	0	0	0	257	2018	108034	526	10289
Surry	213345	0	0	0	775	0	158194	0	54376
Wilkes	370646	0	2279	6133	114	27546	86957	26886	220731
Yadkin	108452	0	0	30	49	853	65706	0	41814
Subarea Total	2838667	45056	6993	35310	9895	107903	1303623	160214	1169668
<u>Lumber Subarea</u>									
Columbus	417463	0	0	15	22	155233	162314	21878	78001
Robeson	297421	0	0	15	7	11224	168121	28007	90047
Scotland	124464	0	3775	18381	3810	5249	54664	10469	28116
Subarea Total	839348	0	3775	18411	3839	171706	385099	60354	196164
<u>Yadkin Study Area Total</u>									
Yadkin Study Area Total	3678015	45056	10768	53721	13734	279614	1688722	220568	1365832

Table A-32. Area of Commercial Forest Land, by Ownership and County, Pee Dee Study Area, 1968

	All Ownerships	National Forest	Misc. Federal	State	County and Municipal	Forest Industry	Farmer	Misc. Pri. Corporate	Misc. Pri. Individual
-----Acres-----									
<u>Region 6</u>									
Clarendon	214207	0	293	4321	234	42821	131009	8882	26647
Kershaw	381083	0	0	743	3127	55060	136598	10308	175247
Lee	105677	0	0	2000	0	893	88443	0	14341
Sumter	225728	0	0	43645	377	28588	129725	0	23393
Region Total	926695	0	0	50709	3738	127362	485775	19190	239628
<u>Region 7</u>									
Chesterfield	322464	0	0	84050	207	21317	164244	4212	48434
Darlington	176830	0	0	909	168	28569	120199	2453	24532
Dillon	135604	0	0	500	43	27169	102988	0	4904
Florence	274883	0	0	55	268	37069	216116	0	21375
Marion	210128	0	0	0	6	84891	89788	0	35443
Marlboro	158075	0	0	70	78	45604	98283	0	14040
Region Total	1277984	0	0	85584	770	244619	791618	6665	148728
<u>Region 8</u>									
Georgetown	388809	0	0	50	318	235225	54432	2016	96768
Horry	486031	0	3424	573	56	129904	312955	0	39119
Williamsburg	387096	0	0	0	52	69207	260045	0	57792
Region Total	1261936	0	3424	623	426	434336	627432	2016	193679
<u>Pee Dee Study Area Total</u>									
	3466615	0	3717	136916	4934	806317	1904825	27871	582035

Table A-33. Net Annual Growth of Growing Stock on Commercial Forest Land by Species Group and County, Yadkin Study Area, 1974

	Growing Stock		
	Softwood	Hardwood	Total
	-----	-----	-----
Thousand Cubic Feet			

<u>Yadkin Main Stem Subarea</u>			
Anson	12787	4474	17261
Cabarrus	2445	3676	6121
Davidson	2848	7322	10170
Davie	982	3375	4357
Forsyth	2224	5479	7703
Guilford	7553	9873	17426
Iredell	5844	8982	14826
Montgomery	8539	8491	17030
Randolph	4490	11752	16242
Rowan	3788	6095	9883
Richmond	6441	3204	9645
Stanly	2648	3383	6031
Surry	7463	8954	16417
Wilkes	12830	13130	25960
Yadkin	3347	3702	7049
Subarea Total	84229	101892	186121

<u>Lumber Subarea</u>			
Columbus	13837	7387	21224
Robeson	6554	8265	14819
Scotland	3080	998	4078
Subarea Total	23471	16650	40121

Yadkin Study			
Area Total	107700	118542	226242

Table A-34. Net Annual Growth of Growing Stock on Commercial Forest Land by Species Group and County, Pee Dee Study Area, 1968

	Growing Stock		
	Softwood	Hardwood	Total
-----Thousand Cubic Feet-----			
<u>Region 6</u>			
Clarendon	7188	7015	14203
Kershaw	13891	5455	19346
Lee	1832	2053	3885
Sumter	8128	5877	14005
Region Total	31039	20400	51439
<u>Region 7</u>			
Chesterfield	9426	4219	13645
Darlington	6152	4329	10481
Dillon	3658	4204	7862
Florence	11129	5856	16985
Marion	6302	7291	13593
Marlboro	3872	5061	8933
Region Total	40539	30960	71499
<u>Region 8</u>			
Georgetown	17188	8547	25735
Horry	17498	11595	29093
Williamsburg	11740	9246	20986
Region Total	46426	29388	75814
Pee Dee Study Area Total	118004	80748	198752

Table A-35. Annual Removals of Growing Stock of Commercial Forest Land by Species Group and County, Yadkin Study Area, 1974.

	Growing Stock		
	Softwood	Hardwood	Total
	-----Thousand Cubic Feet-----		
<u>Yadkin Main Stem Subarea</u>			
Anson	9971	5161	15132
Cabarrus	2715	2318	5033
Davidson	1066	2855	3921
Davie	1212	703	1915
Forsyth	2257	4705	6962
Guilford	891	5567	6458
Iredell	2814	4702	7516
Montgomery	5645	2484	8129
Randolph	5842	7556	13398
Rowan	1867	1122	2989
Richmond	6162	1555	7717
Stanly	1822	904	2726
Surry	1841	3179	5020
Wilkes	5711	1876	7587
Yadkin	5787	1518	7305
Subarea Total	55603	46205	101808

<u>Lumber Subarea</u>			
Columbus	11242	4225	15467
Robeson	8570	3199	11769
Scotland	3548	245	3793
Subarea Total	23360	7669	31029

Yadkin Study Area Total	78963	53874	132837

Table A-36. Annual Removals of Growing Stock on Commercial Forest Land by Species Group and County, Pee Dee Study Area, 1968

	Growing Stock		
	Softwood	Hardwood	Total
	-----Thousand Cubic Feet-----		
<u>Region 6</u>			
Clarendon	4941	7153	12094
Kershaw	12119	4515	16634
Lee	872	3090	3962
Sumter	3451	5147	8598
Region Total	21383	19905	41288
<u>Region 7</u>			
Chesterfield	3077	3933	7010
Darlington	1805	2537	4342
Dillon	4670	2019	6689
Florence	9540	3491	13031
Marion	2870	4195	7065
Marlboro	5957	5229	11186
Region Total	27919	21404	49323
<u>Region 8</u>			
Georgetown	13416	4427	17843
Horry	11029	4641	15670
Williamsburg	6898	5802	12700
Region Total	31343	14870	46213
Pee Dee Study Area Total	80645	56179	136824

Table A-37. Area of Commercial Forest Land by Stocking Classes of Growing Stock Trees by County, Yadkin Study Area, 1974.

Yadkin Main Stem						
Subarea	Non- Stocked	Poorly Stocked	Medium Stocked	Fully Stocked	Over Stocked	All Classes
-----Acres-----						
Anson	0	21035	126526	73654	12579	233794
Cabarrus	0	11601	63805	23203	6174	104783
Davidson	0	25134	127565	37646	0	190345
Davie	0	8428	50965	16856	0	76249
Forsyth	0	17414	65306	32048	0	114768
Guilford	0	24214	81704	83089	9686	198693
Iredell	6223	12445	105776	43555	1267	169266
Montgomery	0	32027	138904	77800	0	248731
Randolph	0	55301	166834	93878	0	316013
Rowan	0	11654	81584	48089	11822	153149
Richmond	25625	85643	73651	34390	0	219309
Stanly	0	20835	72547	27742	0	121124
Surry	4944	29661	123588	50208	4944	213345
Wilkes	0	82759	195814	85384	6689	370646
Yadkin	5973	23893	42667	29946	5973	108452
Subarea Total	42765	462044	1517236	757488	59134	2838667

Lumber Subarea						
Columbus	14309	63809	179905	142934	16506	417463
Robeson	13724	87958	134605	61134	0	297421
Scotland	15184	38114	47766	23400	0	124464
Subarea Total	43217	189881	362276	227468	16506	839348

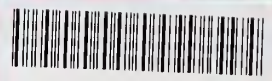
Yadkin Study Area Total	85982	651925	1879512	984956	75640	3678015

Table A-38. Area of Commercial Forest Land, by Stocking Classes of Growing Stock Trees, by County, Pee Dee Study Area, 1968

	Non- Stocked	Poorly Stocked	Medium Stocked	Fully Stocked	Over- Stocked	All Classes
-----Acres-----						
<u>Region 6</u>						
Clarendon	4844	36738	123835	38080	10710	214207
Kershaw	23197	128007	172243	52482	5154	381083
Lee	0	47804	50703	7170	0	105677
Sumter	0	42074	141835	39692	2127	225728
Region Total	28041	254623	488616	137424	17991	926695
<u>Region 7</u>						
Chesterfield	29846	120190	141219	26997	4212	322464
Darlington	2453	47027	105605	19066	2679	176830
Dillon	2452	29388	84876	18888	0	135604
Florence	0	53944	172305	45243	3391	274883
Marion	7318	48867	109793	37617	6533	210128
Marlboro	6464	25169	101553	24889	0	158075
Region Total	48533	324585	715351	172700	16815	1277984
<u>Region 8</u>						
Georgetown	20610	54237	216762	86422	10778	388809
Horry	11510	107816	272421	72930	21354	486031
Williamsburg	4248	92141	241835	46245	2627	387096
Region Total	36368	254194	731018	205597	34759	1261936
Pee Dee Study Area Total	112942	833402	1934985	515721	69565	3466615



R0001 027924



R0001 027924